DEPARTMENT OF ENERGY, MINES AND RESOURCES
Ottawa

OCEAN WEATHER STATION 'P'
NORTH PACIFIC OCEAN

December 3, 1967 to February 28, 1968

No. 6

1969 Data Record Series

Canadian Oceanographic Data Centre

Programmed by the
Canadian Committee on Oceanography

1969

Requests for copies should be sent to:

The Canadian Oceanographic Data Centre, Dept. of Energy, Mines and Resources, 615 Booth Street, Ottawa.

Catalogue No. M58 - 1/1969 — 6

The Queen's Printer
Ottawa, Canada
1969

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CODC References 02-67-010
02-68-002

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DEPARTMENT OF ENERGY, MINES AND RESOURCES
and
FISHERIES RESEARCH BOARD OF CANADA

Ocean Weather Station "P" North Pacific Ocean

Ships:	CCGS "Vancouver"	CCGS "Quadra"
Local cruise designations:	P-67-5	Patrol No. 2
CODC cruise reference nos:	02-67-010	02-68-002
Cruise periods:	Dec 3, 1967-Jan 22, 1968	Jan 17-Feb 28, 1968
Scientist-in-charge:	J. Wong	
Observers:	D. Loewen O. Joergensen	Ship's crew

MARINE SCIENCES BRANCH
and
PACIFIC OCEANOGRAPHIC GROUP
Nanaimo, B.C.

SECTION I

Description of data collection procedures

Figure 1.

The Canadian Weathership CCGS "Vancouver"

Photo by
Canadian Hydrographic Service
Victoria, B.C.

Figure 2.

The Canadian Weathership CCGS "Quadra"

Photo by
Canadian Hydrographic Service
Victoria, B.C.

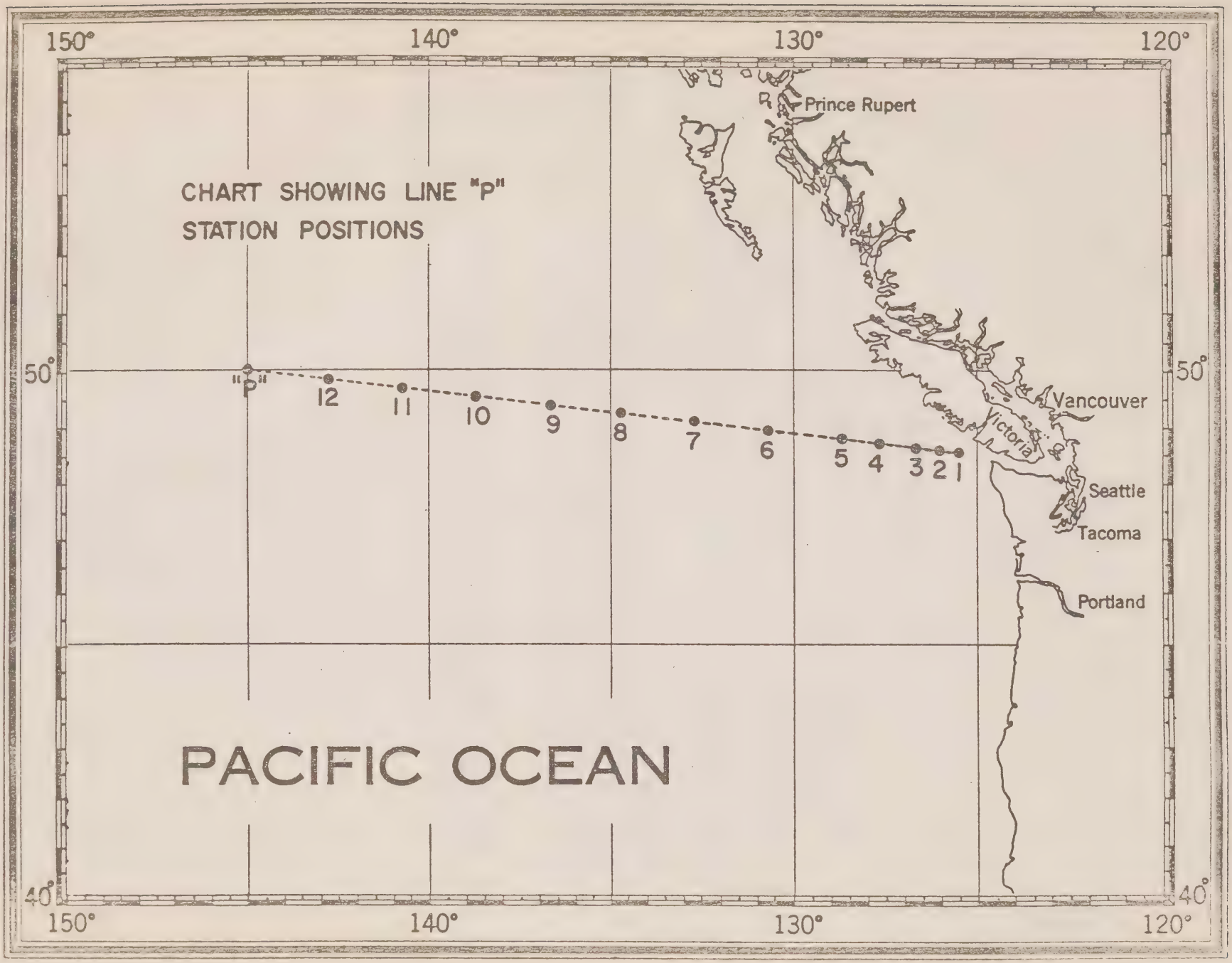

150°
140°
130°
120°
CHART SHOWING LINE "P"
STATION POSITIONS
Prince Rupert
Vancouver
Victoria
Seattle
Tacoma
Portland
"P"
12
11
10
9
8
7
6
5
4
3
2
1
50°
40°
PACIFIC OCEAN

Figure 3.

INTRODUCTION

Canadian operation of Ocean Weather Station "P" (latitude 50°00'N, longitude 145°00'W) was inaugurated in December 1950. The Station is manned by two vessels operated by the Marine Services Branch of the Department of Transport. They are the CCGS "Vancouver" and the CCGS "Quadra" (Fig. 1 and 2). Each ship remains on Station for a period of 6 weeks, and is then relieved by the alternate ship, thus maintaining a continuous watch. The chief purpose of the Station is to operate as a meteorological station for surface and upper-air observations, and as an air-sea rescue station.

The CCGS "Vancouver" is completely equipped with deck and laboratory facilities required to make bathythermograph and oceanographic observations. Oceanographers from the Pacific Oceanographic Group accompany the ship on each patrol. The CCGS "Quadra" is equipped with bathythermograph equipment only. The BT observations on both ships are made by members of the ship's crew.

Bathythermograph observations have been made at Station "P" since July 1952. A program of oceanographic observations was commenced in August 1956, and it has been increased and altered to suit the requirements for new and additional information.

CRUISE LOG, CCGS "VANCOUVER", SURVEY P-67-5

Dec. 3: departed from Esquimalt, B.C., adverse weather prevented B.T. observations enroute to Station "P".

Dec. 8: arrived at Station "P", commenced regular observations.

Jan. 20: relieved by CCGS "Quadra" and proceeded on the return journey; no oceanographic stations were observed on Line P. A total of 249 mechanical and 17 expendable BT observations were made by the ship's crew during the patrol.

Jan. 22: docked at Esquimalt base.

OBSERVATIONAL PROCEDURES

During survey P-67-5, water samples and temperatures were obtained at depth with Nansen water sample bottles equipped with either Richter and Wiese or Yoshino reversing thermometers. Surface samples (0 m) were obtained in a one-gallon rubber bucket. The surface temperature was measured in this bucket with a thermometer graduated in 0.5 C intervals.

Station locations were determined by the officers of the watch, who also made the meteorological observations reported with the oceanographic data.

LABORATORY PROCEDURES

The salinity determinations of the oceanographic station samples from Survey P-67-5, and of the daily surface samples taken in conjunction with the BT observations from both ships, were made with an inductive salinometer, Model 601 MK III, Auto-Lab Industries. Most of the oceanographic station samples were analysed on board "Vancouver". The salinity data are the means of duplicate determinations, and are considered to have an accuracy at the 35‰ level of $\pm$0.003‰ (Brown and Hamon, 1961).

The conversions from conductivity ratio to salinity were made from tables supplied by the manufacturer of the salinometer. These tables are derived from the report by Thomas, Thompson and Utterback (J. Cons. Vol. 9, 1934) and from calculations made by A.P. Francischetti, U.S. Intl. Ice Patrol.

The dissolved oxygen analyses were done in the shipboard laboratory by a modified Winkler method (Strickland and Parsons, 1965). The data are the means of duplicate determinations.

BATHYTHERMOGRAPH OBSERVATIONS

BT observations to 275 m depth were made from "Vancouver" every 3 hours during the patrol, and also on the return journey to the base. The "Quadra" made 4 BT observations during the journey to Station "P", and took a total of 216 observations to 275 m every 3 hours whilst on station, missing 5 days. No BT observations were made on the ingoing trip.

The bathythermograms have been prepared by the Canadian Oceanographic Data Centre in their BT-aperture card format (Sauer, 1964), and copies are available from the Centre. The bathythermograms presented in Section IV of this data record were reproduced from the BT-aperture cards. The consecutive number entered below each bathythermogram refers to an entry in Table 1 (P-67-5) or Table 2 (Patrol No. 2) which list the information concerning time/date, position, and associated meteorological information.

PERSONNEL

The scientist-in-charge of the Station P program was Mr. J. Wong. The oceanographers on board "Vancouver" during survey P-67-5 were Mr. D. Loewen and Mr. O.H. Joergensen. The master of the ship was Captain F.G. Nesbitt. The ships' crews made the BT observations.

SECTION II

Description of the machine-generated data record

INTRODUCTION

This section applies to the machine processing phase of the data reduction and computation.

The oceanographic data previously recorded on CODC data summary forms, a sample of which is shown on the next page, are transferred to punch-cards for subsequent electronic data processing on an IBM 1620 computer, using CODC's OCEANS II program. In addition to computing routine derived quantities, the program carries out unit and format conversions, range checks, plausibility tests, internal editing, and if required, interpolation at standard oceanographic depths. When interpolations are carried out, additional derived values are computed.

After the data have been processed, the data record is prepared using an IBM 1401 computer configuration with the OCEAN REPORT III program, which provides for pre-edited high speed print-out on continuous direct-image masters. These masters subsequently yield the required volume of copies for distribution.

Provision has been made to enter an "**estimate of precision**" for each observed variable selected for interpolation at standard oceanographic depths. The precision depends on the instrument and/or technique used to determine the variable. A standard precision stated as a **standard deviation** (σ) can be determined for each instrument or technique under routine field conditions by making duplicate determinations of the variables for a homogeneous sample of sea water. These standard deviations are given for each cruise under "GENERAL INFORMATION" in section III of the data record.

The **measurement error estimate** of a specific observation in this data record, is stated as a multiple of the standard deviation derived as above, and entered in a column immediately to the right of the reported variable. In order to distinguish it from an additional decimal digit, the measurement error estimate is recorded alphabetically, (i.e., 1σ = A, 2σ = B, etc.; in this data record "A" is suppressed).

An option is provided with respect to the measurement of the salinity variable. If observed to three decimal digits, the last digit takes the place of the measurement error estimate.

In the past, a number of methods for both manual and machine interpolation have been developed. Studies and comparisons of the several methods have shown that no single method is universally acceptable. The manual methods are the most elaborate and flexible, but often require subjective decisions. In machine interpolation, all the present methods fail to yield acceptable results under some circumstances. Hence, it is considered necessary to qualify interpolated values by stating an "**interpolation error estimate**" derived from the particular interpolation formula used. There are two purposes in stating the error estimates; **first**, to give an indication of the quality of the interpolated data; **second**, to allow the oceanographer to redesign his observational procedures in order to reduce interpolation errors in future observations.

The interpolation scheme chosen for the OCEANS II program consists of a combination of two 3-point interpolations using the Lagrangian interpolation polynomial, as recommended by Rattray (1962). A parabola is fitted through three values of a given variable (T, S, O_2) considered as a function of depth. The two interpolation parabolas require a total of four points (observed depths). The middle points are common to both parabolas. The average of the two values obtained from the parabolas at standard depth is taken as the interpolated value, and a function of their difference as an estimate of the interpolation error.

This function combined with the "**measurement error estimate**" comprises the "**combined measurement and interpolation error estimate**". It is expressed as a multiple of the standard deviation of measurement (σ) under normal routine field conditions by:

CANADIAN OCEANOGRAPHIC DATA CENTRE

MASTER

1 IDENT. CODE	2 LATITUDE (N=+)	3 LONGITUDE (W=+)	5 DATE	6 TIME	7 DEPTH	9 NO. DEPTHS OBS'D.	VESSEL
COUNTRY INST.	DEG.° MIN. 1/10	DEG.° MIN. 1/10	YEAR MONTH DAY	HOURS G.M.T. 1/10	TO BOTTOM		ENTERED BY / CHECKED BY
1 8							
1 2 3 4	5 6 7 8 9	10 11 12 13 14 15	19 20 21 22 23 24	25 26 27	28 29 30 31	34 35	

10 WATER	11 WAVES I	12 WAVES II	13 WIND	14 BAROMETER	15 AIR TEMP. 1/10	16 WET BULB 1/10	17 W.W. CODE (SEPT. 62)	18 CLOUD TYPE AMT.	19 VIS.	20 HOURS AFTER H.W.	21 UNASSIGNED	22 CRUISE REFERENCE NUMBER	23 CONSEC. NUMBER	24 CARD TYPE
COLOUR TRANS.	Dw Dw Pw Hw	Dw Dw Pw Hw	DIR. FORCE SPEED											1
36 37 38 39	40 41 42 43	44 45 46 47	48 49 50 51	52 53 54	55 56 57	58 59 60	61 62	63 64	65	66 67	68 69 70 71 72 73	74 75 76	77 78 79	80

OBSERVED CARD

	6 TIME HOURS G.M.T.	1/10	7 DEPTH OF SAMPLE	e	8 TEMPERATURE	e	9 SALINITY	d/e	10 OXYGEN	e	13 PO_4 - P	14 TOTAL - P	15 NO_2 - N	16 NO_3 - N	17 SiO_3 - Si	18 P.H.	CARD TYPE
1																	3
2																	3
3																	3
4																	3
5																	3
6																	3
7																	3
8																	3
9																	3
10																	3
11																	3
12																	3
13																	3
14																	3
15																	3
16																	3
17																	3
18																	3
19																	3
20																	3
	25 26 27		28 29 30 31	32	33 34 35 36	37	38 39 40 41	42	43 44 45 46		55 56 57	58 59 60	61 62 63	64 65 66	67 68 69	70 71 72	80

$$\frac{\sigma_i}{\sigma} = \left\{ \frac{(\Delta V_i)^2}{\sigma^2} + \sum_{n=j-2}^{j+1} (\gamma_n)^2 \left(\frac{\sigma_n}{\sigma}\right)^2 \right\}^{1/2}$$, where

σ = Standard deviation of the combined error estimates at standard oceanographic depth,

ΔV_i = the interpolation error estimate of variable "V" at standard oceanographic depth = $\frac{1}{3}(V_{i_1} - V_{i_2})$

γ = Interpolation polynomial coefficient.

Z_j = Observed depth.

Z_i = Standard oceanographic depth, such that: $Z_{j-2} < Z_{j-1} < Z_i < Z_j < Z_{j+1}$

The integral part of the fraction $\frac{\sigma_i}{\sigma}$, if ≥ 2, is reported in this Data Record following the interpolated variable. It represents the **combined measurement and interpolation error estimate.** In order to distinguish it from an additional decimal digit, it is recorded alphabetically (e.g.: 2 as "B", 3 as "C", etc.).

With respect to the interpolated value of the salinity variable if reported to three decimal digits, the **interpolation error estimate** is given only when $\frac{\sigma_i}{\sigma} \geq 2$ (the salinity is then recorded to two decimal places). If less than 2, the mean obtained from the two interpolation parabolas is reported to three decimal places.

EXPLANATION OF DATA RECORD HEADINGS

MASTER HEADINGS

(1) C-REF-NO	*(6) YR*	*(11) DEPTH*	*(16) WAVES 1*	*(21) AIR T*	*(26) VIS*
(2) CONS. NO	*(7) MONTH*	*(12) MXSAMPD*	*(17) WAVES 2*	*(22) WET B*	*(27) STN*
(3) LAT	*(8) DAY*	*(13) NO. DPTH*	*(18) WND-DIR*	*(23) ww-CODE*	
(4) LON	*(9) HR*	*(14) W-COLOR*	*(19) WND-FCE*	*(24) CLD-TPE*	
(5) MARSD SQ	*(10) C/I*	*(15) W-TRNSP*	*(20) BARO*	*(25) CLD-AMT*	*(28) HW*

(1) CRUISE REFERENCE NUMBER: Assigned by the Institute. Commences with 001 at the beginning of each year (effective Jan. 1, 1963). Prior to that date the CRN was a number designated by CODC.

(2) CONSECUTIVE NUMBER: Indicates the chronological order in which the stations were occupied.

(3) LATITUDE:

(4) LONGITUDE: Indicate the position of the platform at the time of observation.

(5) MARSDEN SQUARE: Designates the geographic area code of the observation (see Marsden square chart).

(6) YEAR:

(7) MONTH:

(8) DAY:

(9) HOUR: The time (Greenwich Mean Time) at which the surface environmental data were recorded. It is reported to tenths of hours (Table 1).
If an "X" precedes the value for HOUR, (prior to Jan. 1, 1963) it indicates that the reported time is doubtful.

(10) COUNTRY/INSTITUTE: The International Geophysical Year (IGY) Country Code/Institute Code - see Table 11.

(11) DEPTH: The sounding reported in metres. If corrected, this is stated in the "GENERAL INFORMATION" chapter of section III. Charted depths are preceded by the letter "C".

(12) MAXIMUM SAMPLING DEPTH: A code to indicate the deepest sampling depth (used for high speed sorting).

00 m - 50 m = 00
51 m - 150 m = 01
151 m - 250 m = 02
etc.

(13) NUMBER OF DEPTHS: The number of levels observed (this is entered to initiate a computer safety check, guarding against the loss of punch-cards).

(14) WATER COLOUR: A code based on the percentage of yellow (see table 2 and Note under FIELD "15" below).

(15) WATER TRANSPARENCY: The depth in metres at which a Secchi disc (white disc, 30 cm. in diameter) just disappears from view, or the optical density expressed in percentage;

NOTE: The "GENERAL INFORMATION" chapter in section III of the data record will state which method was used.

(16) WAVES 1 ($d_W d_W P_W H_W$-code): The direction, period and height of the **wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.

(17) WAVES 2 ($d_W d_W P_W H_W$-code): The direction, period and height of the predominant **non-wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.

(18) WIND DIRECTION: The true direction to the nearest 10 degrees from which the wind is blowing (wind direction 990 means:—wind variable or direction unknown).

(19) WIND FORCE (WND-FCE): Beaufort notation (See Table 6).

WIND SPEED (WND-SPD): Anemometer reading reported in metres per second. Instrument height reported in "GENERAL INFORMATION" chapter of section III.

(20) BAROMETER: The barometric pressure reported in millibars: the "GENERAL INFORMATION" chapter in Section III of the data record will state the type of instrument used.

(21) AIR TEMPERATURE: In degrees Celsius.

(22) WET BULB: In degrees Celsius.

(23) ww CODE: Present Weather Code (See Table 7). Ref: WMO Code 4677

(24) CLOUD TYPE: The type of predominating clouds (See Table 8). Ref: WMO Code 0500.

(25) CLOUD AMOUNT: The sky coverage in eighths (See Table 9) Ref: WMO Code 2700

(26) VISIBILITY: Visibility at the surface (See Table 10). Ref: WMO Code 4300.

(27) STATION: A station reference number, assigned by the institute prior to, or during the survey.

(28) HOURS AFTER HIGH WATER: Indicates the state of the tide for nearshore observations.

OBSERVED DATA HEADINGS

(1) GMT *(2) DEPTH* *(3) TEMP* *(4) SAL* *(5) OXYGEN* *(6) SGMT*
(7) SOUND *(8) PO_4* *(9) -P-* *(10) NO_2* *(11) NO_3* *(12) SiO_3* *(13) pH.*

NOTE: Headings (1) to (7) will always be present. Headings (8) to (13) appear only when one or more additional chemical entries were made.

(1) G.M.T.: The Greenwich Mean Time of (in-situ) thermometer inversion and sea water sample collection.

When a multiple cast was initiated prior to and continued after midnight, the times indicated are uninterrupted by the change of day and appear beyond 24.0 hours. This will be accompanied by a statement: "MULTIPLE CAST CONTINUED NEXT DAY", which is printed following the last level of observed values.

(2) DEPTH: The depth in metres at the reversal time of deepest cast.

(3) TEMPERATURE: Temperatures from deepsea reversing thermometers, read to 0.01° C. Surface temperature measurement procedures are described in the chapter "OBSERVATION PROCEDURES" of section I, and/or the "GENERAL INFORMATION" chapter of section III.
An alphabetical character following the temperature value represents the measurement error estimate referred to in the INTRODUCTION to this section.

(4) SALINITY: Salinity as defined by: $S = 0.03 + 1.805\ Cl‰$, reported in:
a. 1/100 parts per 1000, or
b. 1/1000 parts per 1000.

In case a: an alphabetical character following the value is the measurement error estimate as referred to under (3).
In case b: no error estimate indication is provided for, but an additional decimal digit takes its place.

(5) OXYGEN: The concentration of dissolved oxygen expressed in millilitres per litre to 2 decimal places.
An alphabetical character following the value is the measurement error estimate as referred to under (3).

(6) SIGMA-T: The specific gravity anomaly as defined by: (Specific gravity – 1) X 10^3 (e.g., σ_t reported as 2456, reads 24.56, and corresponds to a specific gravity of 1.02456).

(7) SOUND: The sound velocity is reported in m/sec. to 1 decimal place (e.g., 1437.9 m/sec.). The computation is carried out using Wilson's formula (1960), expressed in terms of temperature, salinity and total pressure.

(8) PO_4 — Phosphate-Phosphorus reported to hundredths of microgram-atoms per litre.

(9) -P- — Total Phosphorus reported to hundredths of microgram-atoms per litre.

(10) NO_2 — Nitrite-Nitrogen reported to hundredths of microgram-atoms per litre – No dissolved nitrogen included –

(11) NO_3 — Nitrate-Nitrogen reported to tenths of microgram-atoms per litre.

(12) SiO_3 — Silicate-Silicon reported in whole microgram-atoms per litre.

(13) pH — The pH value.

NOTE: "TRC" (trace) is reported when a chemical entry has a value less than the standard deviation of measurement for that particular variable.

INTERPOLATED DATA HEADINGS

(1) DEPTH (2) TEMP (3) SAL (4) OXYGEN (5) SGMT (6) SOUND (7) DELTA-D (8) POT-EN (9) SVA.

(1) DEPTH: Standard Oceanographic Depth in whole metres, as well as additional depths: 125, 175, 225, 3500, 4500, 5500, 6500, 7500, 8500, 9500.

(2) TEMPERATURE: Interpolated value at standard depth, followed by the **combined measurement and interpolation error estimate** (see "INTRODUCTION" to section II of the data record).

(3) SALINITY:

A. The reported salinity values are measured to three decimal places.
   (i) the interpolation error estimate is less than twice the standard deviation of measurement
      –the interpolated value is reported to three decimal places (e.g., 30.139).
   (ii) the interpolation error estimate is equal to or greater than twice the standard deviation of measurement.
      –the interpolated value is reported to two decimal places, and followed by the **interpolation error estimate** (e.g., 29.23 C).

B. The reported salinity values are measured to two decimal places and followed by the measurement error estimate.
      –the interpolated value is reported to two decimal places, and followed by the **combined measurement and interpolation error estimate** (e.g., 30.59 B).

(4) OXYGEN: Interpolated value at standard depth, followed by the **combined measurement and interpolation error estimate** (see "Introduction" to section II of the data record).

(5) SIGMA-T: Computed from temperature and salinity values at standard oceanographic depth.

(6) SOUND VELOCITY: Computed from temperature, salinity and total pressure values at standard oceanographic depth, using Wilson's formula (1960).

(7) DELTA-D: The geo-potential anomaly as defined by:

$$\Delta D = \int_0^P \delta dp$$

ΔD is expressed in dynamic metres (10^5 ergs/gram) and recorded to three decimal places (e.g., 2.345 dyn. metres).

(8) POTENTIAL ENERGY ANOMALY: The Potential energy anomaly χ as defined by:

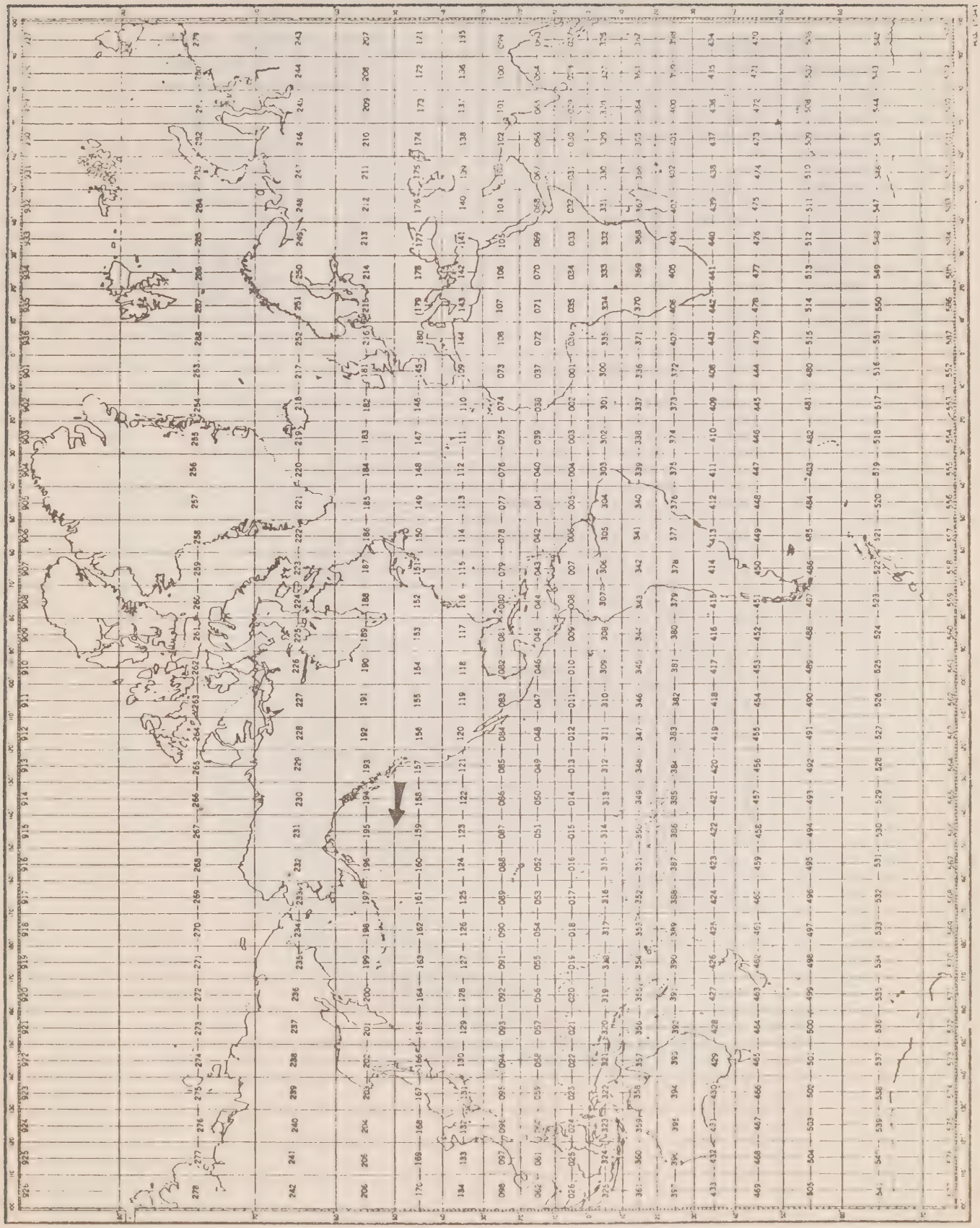
$$\chi = {}^1/g \int_0^P p\delta dp = \int_0^Z \rho p \delta dz$$

χ is expressed in units of 10^8 ergs/cm^2 and recorded to two decimal places (e.g., 116.44).

(9) SPECIFIC VOLUME ANOMALY: The specific volume anomaly as defined by:

$$\delta = \alpha - \alpha_{35\ 0,P}$$

δ is expressed in ml/gr, and conventionally reported as $10^5\ \delta$, to one decimal place (i.e., δ reported as 1234, reads 123.4, and corresponds to a specific volume anomaly of 0.001234 ml/gr.).



MARSDEN SQUARE CHART

Table 1

CONVERSION MINUTES TO $^1/_{10}$ HRS.

Minutes	Tenths Hrs.
00—03	0
04—08	1
09—15	2
16—20	3
21—27	4
28—32	5
33—39	6
40—44	7
45—51	8
52—56	9
57—59	0 (next HR.)

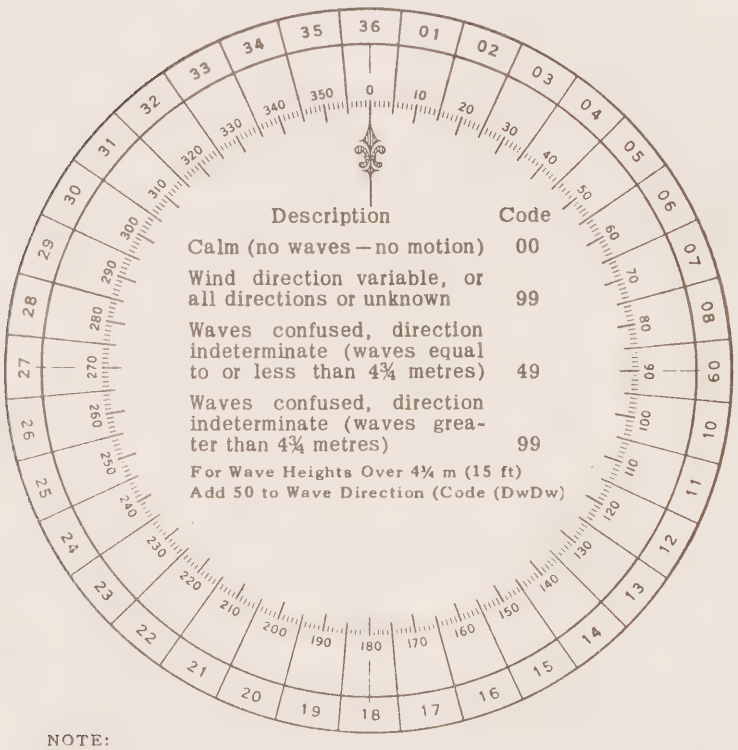
Table 2

WATER COLOR CODE

Based on Percentage Yellow

Code:	Description
00	Deep Blue
10	Blue
20	Greenish Blue
30	Bluish Green
40	Green
50	Light Green
60	Yellowish Green
70	Yellow Green
80	Green Yellow
90	Greenish Yellow
99	Yellow

Table 3. DIRECTION CODE (dd)



NOTE:
Always use the true direction from which the wind is blowing, or the direction from which Waves I (sea), or Waves II (swell) come.

Table 4. PERIOD OF THE WAVES (Pw)

(Measure to the Nearest Second)

Code:	Period in Seconds:	Code:	Period in Seconds:
2	5 sec. or less	8	16 or 17 sec.
3	6 or 7 sec.	9	18 or 19 sec.
4	8 or 9 sec.	0	20 or 21 sec.
5	10 or 11 sec.	1	Over 21 sec.
6	12 or 13 sec.	X	Calm, or period
7	14 or 15 sec.		not determined

Table 5. HEIGHT OF THE WAVES (Hw)

- The average value of the wave height (vertical distance between trough and crest) is reported, as obtained from the larger well formed waves of the wave system being observed.
- Each code figure provides for reporting a range of heights. For example: 1 = ¼ m (1 ft) to ¾ m (2½ ft); 5 = 2¼ m (7 ft) to 2¾ m (9 ft); 9 = 4¼ m (13½ ft) to 4¾ m (15 ft), etc.
- If a wave height comes exactly midway between the heights corresponding to two code figures, the lower code figure is reported; e.g. a height of 2¾ m is reported by code figure 5.

Code			Code	
0	Less than ¼ m (1 ft)		0	5 m (16 ft)
1	½ m (1½ ft)		1	5½ m (17½ ft)
2	1 m (3 ft)		2	6 m (19 ft)
3	1½ m (5 ft)	Add	3	6½ m (21 ft)
4	2 m (6½ ft)	50	4	7 m (22½ ft)
5	2½ m (8 ft)	to	5	7½ m (24 ft)
6	3 m (9½ ft)	Dw Dw	6	8 m (25½ ft)
7	3½ m (11 ft)		7	8½ m (27 ft)
8	4 m (13 ft)		8	9 m (29 ft)
9	4½ m (14 ft)		9	9½ m (30½ ft) or more
x	Height not determined			

Table 6. WIND FORCE CODE

The Beaufort force of the wind is estimated from the appearance of the sea surface, according to the table below. This table is only intended as a guide to show roughly what may be expected on the open sea, remote from land. Factors which must be taken into account are the "lag" effect between the wind increasing and the sea getting up; and the influence of "fetch", depth, swell, heavy rain and tide effect on the appearance of the sea. Estimation of the wind force by this method becomes unreliable in shallow water or when close inshore, owing to the tidal effect and the shelter provided by the land.

Code	Appearance of sea if fetch and duration of the blow have been sufficient to develop the sea fully	Description
00	Sea like a mirror	Calm
01	Ripples with the appearance of scales are formed, but without foam crests.	Light Air
02	Small wavelets; crests have a glassy appearance and do not break.	Light Breeze
03	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses.	Gentle Breeze
04	Small waves, becoming longer; fairly frequent white horses.	Moderate breeze
05	Moderate waves; many white horses are formed (chance of some spray)	Fresh Breeze
06	Large waves; white foam crests everywhere (probably some spray)	Strong Breeze
07	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	Near Gale
08	Moderately high waves; edges of crests begin to break into the spindrift; foam is blown in well-marked streaks along the direction of the wind.	Gale
09	High waves; dense streaks of foam along wind; crests begin to topple, tumble and roll over; spray may affect visibility.	Strong Gale
10	Very high waves with long overhanging crests; foam in great patches blown in dense white streaks along wind; sea surface takes a white appearance; tumbling becomes heavy and shock-like; visibility affected.	Storm
11	Exceptionally high waves (medium sized ships may be lost to view behind waves); sea covered with long white patches of foam lying along the wind; everywhere edges of crests are blown into froth; visibility affected.	Violent Storm
12	Air is filled with foam and spray; sea completely white with driving spray; visibility seriously affected.	Hurricane

Table 7. PRESENT WEATHER

W.W. CODE

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

Code figure ww

No meteors except photometeors

ww		
00	Cloud development not observed or not observable	characteristic change of the state of sky during the past hour
01	Clouds generally dissolving or becoming less developed	
02	State of sky on the whole unchanged	
03	Clouds generally forming or developing	

Haze, dust, sand or smoke

ww		
04	Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes	
05	Haze	
06	Widespread dust in suspension in the air, not raised by wind at or near the station at the time of observation	
07	Dust or sand raised by wind at or near the station at the time of observation, but no well developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen	
08	Well developed dust whirl(s) or sand whirl(s) seen at or near the station during the preceding hour or at the time of observation, but no dustorm or sandstorm	
09	Duststorm or sandstorm within sight at the time of observation, or at the station during the preceding hour	
10	Mist	
11	Patches of	shallow fog or ice fog at the station, whether on land or sea, not deeper than about 2 metres on land or 10 metres at sea
12	More of less continuous	
13	Lightning visible, no thunder heard	
14	Precipitation within sight, not reaching the ground or the surface of the sea	
15	Precipitation within sight, reaching the ground or the surface of the sea, but distant (i.e. estimated to be more than 5 km) from the station	
16	Precipitation within sight, reaching the ground or the surface of the sea, near to, but not at the station	
17	Thunderstorm, but no precepitation at the time of observation	
18	Squalls	at or within sight of the station during the preceding hour or at the time of observation
19	Funnel clouds	

ww		
ww = 20 – 29	Precipitation, fog, ice fog or thunderstorm at the station during the preceding hour but not at the time of observation	
20	Drizzle (not freezing) or snow grains	not falling as shower(s)
21	Rain (not freezing)	
22	Snow	
23	Rain and snow or ice pellets, type (a)	
24	Freezing drizzle or freezing rain	
25	Shower(s) of rain	
26	Shower(s) of snow, or of rain and snow	
27	Shower(s) of hail, or of rain and hail	
28	Fog or ice fog	
29	Thunderstorm (with or without precipitation)	
ww = 30 – 39	Duststorm, sandstorm, drifting or blowing snow	
30	Slight or moderate duststorm or sandstorm	– has decreased during the preceding hour
31		– no appreciable change during the preceding hour
32		– has begun or has increased during the preceding hour
33	Severe duststorm or sandstorm	– has decreased during the preceding hour
34		– no appreciable change during the preceding hour
35		– has begun or has increased during the preceding hour
36	Slight or moderate blowing snow	generally low (below eye level)
37	Heavy drifting snow	
38	Slight or moderate blowing snow	generally high (above eye level)
39	Heavy blowing snow	
ww = 40 – 49	Fog or ice fog at the time of observation	
40	Fog or ice fog at a distance at the time of observation, but not at the station during the preceding hour, the fog or ice fog extending to a level above that of the observer	
41	Fog or ice fog in patches	
42	Fog or ice fog, sky visible	has become thinner during the preceding hour
43	Fog or ice fog, sky invisible	
44	Fog or ice fog, sky visible	no appreciable change during the preceding hour
45	Fog or ice fog, sky invisible	
46	Fog or ice fog, sky visible	has begun or has become thicker during the preceding hour
47	Fog or ice fog, sky invisible	
48	Fog, depositing rime, sky visible	
49	Fog, depositing rime, sky invisible	

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

PRECIPITATION ON STATION AT TIME OF OBSERVATION

ww = 50 – 59	Drizzle	
50	Drizzle, not freezing, intermittent	slight at time of observation
51	Drizzle, not freezing, continuous	
52	Drizzle, not freezing, intermittent	moderate at time of observation
53	Drizzle, not freezing, continuous	
54	Drizzle, not freezing, intermittent	heavy (dense) at time of observation
55	Drizzle, not freezing, continuous	
56	Drizzle, freezing, slight	
57	Drizzle, freezing, moderate or heavy (dense)	
58	Drizzle and rain, slight	
59	Drizzle and rain, moderate or heavy	

ww = 60 – 69	Rain	
60	Rain, not freezing, intermittent	slight at time of observation
61	Rain, not freezing, continuous	
62	Rain, not freezing, intermittent	moderate at time of observation
63	Rain, not freezing, continuous	
64	Rain, not freezing, intermittent	heavy at time of observation
65	Rain, not freezing, continuous	
66	Rain, freezing, slight	
67	Rain, freezing, moderate or heavy	
68	Rain or drizzle and snow, slight	
69	Rain or drizzle and snow, moderate or heavy	

70 – 79	Solid precipitation not in showers	
ww		
70	Intermittent fall of snow flakes	slight at time of observation
71	Continuous fall of snow flakes	
72	Intermittent fall of snow flakes	moderate at time of observation
73	Continuous fall of snow flakes	
74	Intermittent fall of snow flakes	heavy at time of observation
75	Continuous fall of snow flakes	
76	Ice prisms (with or without fog)	
77	Snow grains (with or without fog)	
78	Isolated starlike snow crystals (with or without fog)	
79	Ice pellets, type (a)	

ww = 80 – 99	Showery precipitation, or precipitation with current or recent thunderstorm	
80	Rain shower(s), slight	
81	Rain shower(s), moderate or heavy	
82	Rain shower(s), violent	
83	Shower(s) of rain and snow mixed, slight	
84	Shower(s) of rain and snow mixed, moderate or heavy	
85	Snow shower(s), slight	
86	Snow shower(s), moderate or heavy	
87	Shower(s) of snow pellets or ice pellets, type (b), with or without rain or rain and snow mixed	– slight
88		– moderate or heavy
89	Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder	– slight
90		– moderate or heavy
91	Slight rain at time of observation	thunderstorm during the preceding hour but not at time of observation
92	Moderate or heavy rain at time of observation	
93	Slight snow, or rain and snow mixed or hail at time of observation	
94	Moderate or heavy snow, or rain and snow mixed or hail at time of observation	
95	Thunderstorm, slight or moderate, without hail, but with rain and/or snow at time of observation	thunderstorm at time of observation
96	Thunderstorm, slight or moderate, with hail at time of observation	
97	Thunderstorm, heavy, without hail, but with rain and/or snow at time of observation	
98	Thunderstorm, combined with duststorm or sandstorm at time of observation	
99	Thunderstorm, heavy, with hail at time of observation	

PRECIPITATION ON STATION AT TIME OF OBSERVATION

Table 8. CLOUD TYPE CODE

Code	Cloud Type	Code	Cloud Type
0	Cirrus Ci	5	Nimbostratus ..... Ns
1	Cirrocumulus Cc	6	Stratocumulus ..... Sc
2	Cirrostratus ..... Cs	7	Stratus ..... St
3	Altocumulus ..... Ac	8	Cumulus ..... Cu
4	Altostratus ..... As	9	Cumulonimbus ..... Cb
x	Cloud not visible owing to darkness, fog, duststorm, sandstorm, or other analogous phenomena		

Table 9. CLOUD AMOUNT CODE

Code	Cloud Cover	Code	Cloud Cover
0	0	6	6 oktas
1	1 okta or less, but not zero	7	7 oktas or more, but not 8 oktas
2	2 oktas	8	8 oktas
3	3 oktas	9	Sky obscured, or cloud amount cannot be estimated
4	4 oktas		
5	5 oktas		

Note: 1 okta = $\frac{1}{8}$ of the sky covered

Table 10. VISIBILITY

Code	Estimate of hor. Visibility	
0	Less than 50 metres	(less than 55 yards)
1	50—200 metres	(approx. 55—220 yards)
2	200—500 metres	(approx. 220—550 yards)
3	500—1,000 metres	(approx. 550 yards— $\frac{5}{8}$ n.m.)
4	1—2 km	(approx. $\frac{5}{8}$—1 n.m.)
5	2—4 km	(approx. 1—2 n.m.)
6	4—10 km	(approx. 2—6 n.m.)
7	10—20 km	(approx. 6—12 n.m.)
8	20—50 km	(approx. 12—30 n.m.)
9	50 km or more	(30 n.m. or more)

Note: n.m. = nautical mile

TABLE 11. INSTITUTE CODE

Code	Institute
01	Marine Ecology Laboratory, Bedford Institute
02	Pacific Oceanographic Group
03	Biological Station, St. Andrews, N.B.
04	Arctic Biological Station, Ste. Anne de Bellevue, P.Q.
05	Biological Station, St. John's Nfld.
06	Station de Biologie Marine, Grande Riviere, P.Q.
07	Marine Sciences Branch, Central Region
08	Defence Research Establishment, Atlantic
09	Defence Research Establishment, Pacific
10	Atlantic Oceanographic Laboratory, Bedford Institute
11	Polar Continental Shelf Project
12	Great Lakes Institute
13	Institute of Oceanography, University of British Columbia
14	Institute of Oceanography, Dalhousie University
15	Marine Sciences Branch, Pacific Region
16	Department of Transport
17	Marine Sciences Centre, McGill University
18	Canadian Forces Maritime Command, East Coast
19	Canadian Forces Maritime Command, West Coast
20	Ontario Water Resources Commission
21	Dept. of National Health and Welfare
22	Inland Waters Branch, Dept. of Energy, Mines and Resources.

SECTION III

Serial oceanographic data

GENERAL INFORMATION

Institute:	Pacific Oceanographic Group, Nanaimo, B.C.
Observation platform:	CCGS "Vancouver"
Vessel's cruising speed:	18 knots
Total number of stations occupied:	12
Anemometer height above sea level:	19 metres
Water transparency:	Secchi Disc
Barometer readings:	Aneroid Barometer (corrected)
Air temperature:	Fixed Thermometer
Wet bulb temperature:	Fixed Thermometer
Surface sea water temperature:	Bucket sample (deck thermometer)
Depth to bottom:	U.S. Coast & Geodetic Survey Chart 8500

The following Standard Deviations were used to express both measurement and interpolation error estimates:

Temperature	0.02
Salinity	0.003
Oxygen	0.03

C-REF-NO 010	YR 1967	DEPTH C 4206	WAVES 1 2035	AIR T 04.4	VIS 9	
CONS. NO 001	MONTH 12	MXSAMPD 05	WAVES 2 2725	WET B 01.7	STN 501	
LAT 49-57 N	DAY 11	NO.DPTH 15	WND-DIR 200	WW-CODE 02		
LON 145-18 W	HR 19.7	W-COLOR 00	WND-SPD 15	CLD-TPE 6		
MARSD SQ 159	C/I 1802	W-TRNSP 19	BARO 1003.1	CLD-AMT 8	HW	

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
197	0000	049 B	32791	701	2596	14677
197	0008	0540	32616	702	2576	14696
197	0016	0542	32598	701 B	2575	14698
197	0024	0541	32618	696	2577	14699
197	0040	0540	32612	696	2576	14701
197	0060	0540	32615	694	2576	14705
197	0080	0545 B	32608	723	2575	14710
197	0101	0541	32612	708	2576	14712
197	0122	0541	32603	702	2575	14715
197	0144	0542	32612	706	2576	14719
197	0166	0442	33230	535	2636	14690
197	0209	0420	33722	332	2677	14694
197	0255	0400	33802	272	2686	14694
197	0356	0362	33924	176	2699	14697
197	0460	0353	34033	119	2709	14711

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0490 B	32791	701	2596	14677	0000	00000	2054
0010	0543	3260 B	702	2575	14697	0022	00001	2253
0020	0542	32607	699	2576	14699	0044	00005	2250
0030	0540	32619	695	2577	14700	0067	00010	2240
0050	0540	32613	693	2576	14703	0112	00029	2246
0075	0544 B	32610	716	2576	14709	0169	00065	2256
0100	0541	32612	709	2576	14712	0225	00116	2253
0125	0544	3259 D	707 B	2574	14717	0282	00182	2279
0150	0517 C	3276 I	666 C	2591	14712	0338	00260	2118
0175	0428 C	3339 E	479	2650	14687	0384	00336	1556
0200	0415 C	3368 E	361	2674	14690	0420	00406	1330
0225	0413	3378 F	301 B	2682	14694	0453	00477	1254
0250	0402	3381 C	274	2686	14694	0484	00553	1224
0300	0381	33862	224	2692	14694	0544	00722	1163
0400	0357	3398 B	145	2704	14703	0657	01123	1059

C-REF-NO 010	YR 1967	DEPTH C 4206	WAVES 1 2332	AIR T 06.3	VIS 5
CONS. NO 002	MONTH 12	MXSAMPD 05	WAVES 2 2047	WET B 04.9	STN 502
LAT 50-00 N	DAY 15	NO.DPTH 15	WND-DIR 230	WW-CODE 02	
LON 145-00 W	HR 00.0	W-COLOR	WND-SPD 07	CLD-TPE 6	
MARSD SQ 195	C/I 1802	W-TRNSP	BARO 1012.8	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
000	0000	051 B	32612	703	2580	14682
000	0010	0543	32591	704	2574	14697
000	0020	0545	32597		2574	14700
000	0030	0543	32600		2575	14701
000	0050	0543	32600	681	2575	14704
000	0075	0542	32602	697	2575	14708
000	0100	0542	32603	712	2575	14712
000	0125	0538	32616	704	2577	14714
000	0150	0423	33371	464	2649	14681
000	0175	0421	33569	387	2665	14687
000	0200	0412	33691	335	2676	14689
000	0250	0392	33751	231	2682	14689
000	0300	0378 B	33867	178	2693	14693
000	0400	0355	33993	113	2705	14702
000	0500	0347	34099	071	2714	14716

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0510 B	32612	703	2580	14682	0000	00000	2210
0010	0543	32591	704	2574	14697	0023	00001	2262
0020	0545	32597	697 B	2574	14700	0045	00005	2261
0030	0543	32600	691 B	2575	14701	0068	00010	2257
0050	0543	32600	681	2575	14704	0113	00029	2259
0075	0542	32602	697	2575	14708	0170	00066	2259
0100	0542	32603	712	2575	14712	0227	00117	2261
0125	0538	32616	704	2577	14714	0284	00182	2249
0150	0423	33371	464	2649	14681	0332	00249	1562
0175	0421	33569	387	2665	14687	0369	00311	1414
0200	0412	33691	335	2676	14689	0404	00377	1315
0225	0402	3373 D	280	2680	14689	0436	00448	1275
0250	0392	33751	231	2682	14689	0468	00526	1254
0300	0378 B	33867	178	2693	14693	0529	00697	1157
0400	0355	33993	113	2705	14702	0640	01094	1047
0500	0347	34099	071	2714	14716	0742	01562	0967

C-REF-NO 010	YR 1967	DEPTH C 4206	WAVES 1 2423	AIR T 06.2	VIS 9	
CONS. NO 003	MONTH 12	MXSAMPD 06	WAVES 2 2645	WET B 05.2	STN 503	
LAT 50-01 N	DAY 15	NO.DPTH 16	WND-DIR 240	WW-CODE 02		
LON 145-01 W	HR 19.3	W-COLOR 00	WND-SPD 10	CLD-TPE		
MARSD SQ 195	C/I 1802	W-TRNSP 19	BARO 1029.8	CLD-AMT 0	HW	

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
193	0000	050 B	32606	702	2580	14678
193	0010	0539	32599	703	2575	14696
193	0020	0542	32600	704	2575	14699
193	0030	0540	32603	704	2575	14700
193	0050	0538	32592	704	2575	14702
193	0075	0538	32589	704	2575	14706
193	0100	0539	32594		2575	14711
193	0125	0420	33093	566	2627	14672
193	0150	0430	33543	410	2662	14686
193	0175	0412	33660	343	2673	14684
193	0200	0407	33740	297	2680	14687
193	0250	0392	33805	227	2687	14690
193	0300	0379 B	33862	180	2693	14694
193	0400	0356	33982	116	2704	14702
193	0500	0348	34081	075	2713	14717
193	0600	0344	34162	063	2720	14733

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0500 B	32606	702	2580	14678	0000	00000	2204
0010	0539	32599	703	2575	14696	0022	00001	2252
0020	0542	32600	704	2575	14699	0045	00005	2255
0030	0540	32603	704	2575	14700	0068	00010	2252
0050	0538	32592	704	2575	14702	0113	00029	2260
0075	0538	32589	704	2575	14706	0170	00066	2264
0100	0539	32594	661	2575	14710	0227	00117	2264
0125	0420	33093	566	2627	14672	0278	00175	1766
0150	0430	33543	410	2662	14686	0318	00231	1440
0175	0412	33660	343	2673	14684	0353	00289	1336
0200	0407	33740	297	2680	14687	0386	00352	1273
0225	0400	3378 B	259	2684	14689	0418	00421	1237
0250	0392	33805	227	2687	14690	0449	00497	1213
0300	0379 B	33862	180	2693	14694	0509	00665	1162
0400	0356	33982	116	2704	14702	0620	01065	1056
0500	0348	34081	075	2713	14717	0723	01539	0981
0600	0344	34162	063	2720	14732	0820	02081	0924

C-REF-NO 010	YR 1967	DEPTH C 4206	WAVES 1 3322	AIR T 03.6	VIS 7
CONS. NO 004	MONTH 12	MXSAMPD 05	WAVES 2 3644	WET B 01.3	STN 504
LAT 49-59 N	DAY 18	NO.DPTH 15	WND-DIR 330	WW-CODE 02	
LON 144-59 W	HR 19.8	W-COLOR 00	WND-SPD 08	CLD-TPE 6	
MARSD SQ 159	C/I 1802	W-TRNSP 19	BARO 1029.2	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
198	0000	048 B	32625	711	2584	14670
198	0010	0534	32617	704	2577	14694
198	0019	0536	32610	706	2576	14696
198	0028	0534	32606	704	2576	14697
198	0047	0533	32607	709	2577	14700
198	0071	0533	32605	706	2576	14703
198	0094	0533	32609	701	2577	14707
198	0118	0513	32674	688	2584	14704
198	0142	0433	33115	563	2628	14680
198	0165	0424	33507	419	2660	14686
198	0189	0418	33658	356	2672	14689
198	0236	0396	33768	257	2683	14689
198	0284	0378 B	33827	208	2690	14690
198	0379	0355	33966	119	2703	14698
198	0478	0349	34079	078	2713	14713

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0480 B	32625	711	2584	14670	0000	00000	2168
0010	0534	32617	704	2577	14694	0022	00001	2233
0020	0536	32609	706	2576	14696	0045	00005	2241
0030	0534	32606	704	2576	14697	0067	00010	2243
0050	0533	32607	709	2577	14700	0112	00029	2243
0075	0534	32603	705	2576	14704	0169	00065	2249
0100	0532	3261 C	703	2577	14708	0225	00116	2248
0125	0489 B	3279 E	659	2596	14697	0280	00178	2069
0150	0426	3327 C	510 B	2640	14681	0327	00244	1644
0175	0422	3359 C	387	2667	14687	0365	00307	1399
0200	0413	3370 B	329	2676	14689	0399	00373	1312
0225	0402	3376 B	276	2682	14689	0431	00443	1258
0250	0390	33788	240	2685	14689	0463	00520	1225
0300	0373 B	33850	191	2692	14691	0523	00689	1164
0400	0352 B	3398 B	112 B	2705	14700	0635	01088	1051

C-REF-NO 010	YR 1967	DEPTH C 4206	WAVES 1 2422	AIR T 06.6	VIS 5
CONS. NO 005	MONTH 12	MXSAMPD 20	WAVES 2 1934	WET B 06.3	STN 505
LAT 50-00 N	DAY 20	NO.DPTH 21	WND-DIR 240	WW-CODE 45	
LON 145-03 W	HR 23.8	W-COLOR 00	WND-SPD 04	CLD-TPE	
MARSD SQ 195	C/I 1802	W-TRNSP 20	BARO 996.3	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
238	0000	056 B	32543	711	2568	14702
238	0010	0530	32557	707	2573	14692
238	0020	0531	32585	707	2575	14694
238	0030	0529	32585	706	2575	14695
238	0050	0528	32584	705	2575	14698
238	0075	0530	32591	704	2576	14703
238	0100	0532	32600	701	2576	14708
238	0125	0414	33051	574	2625	14669
238	0150	0400	33448	426	2658	14672
238	0175	0403	33623	356	2671	14680
238	0200	0415	33752	287	2680	14691
238	0250	0394	33800	228	2686	14691
238	0300	0376	33863	174	2693	14692
238	0400	0360	33975	123	2703	14704
‡245	0500	0352	34071	080	2712	14718
‡245	0600	0340 B	34155	059	2720	14731
‡245	0800	0315	34303	056	2734	14755
‡245	1000	0285	34389	055	2743	14777
‡245	1200	0260	34442	058	2750	14800
‡245	1500	0230	34505	079	2757	14839
‡245	2000	0194	34583	133	2766	14909

‡MULTIPLE CAST CONTINUED NEXT DAY

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0560 B	32543	711	2568	14702	0000	00000	2316
0010	0530	32557	707	2573	14692	0023	00001	2273
0020	0531	32585	707	2575	14694	0046	00005	2254
0030	0529	32585	706	2575	14695	0069	00010	2253
0050	0528	32584	705	2575	14698	0114	00029	2255
0075	0530	32591	704	2576	14703	0171	00065	2254
0100	0532	32600	701	2576	14708	0227	00116	2252
0125	0414	33051	574	2625	14669	0278	00174	1792
0150	0400	33448	426	2658	14672	0319	00232	1481
0175	0403	33623	356	2671	14680	0355	00291	1355
0200	0415	33752	287	2680	14691	0388	00355	1273
0225	0408 B	3379 D	251 B	2684	14693	0420	00424	1237
0250	0394	33800	228	2686	14691	0451	00499	1219
0300	0376	33863	174	2693	14692	0511	00668	1158

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0400	0360	33975	123	2703	14704	0623	01069	1065
0500	0352	34071	080	2712	14718	0727	01548	0993
0600	0340 B	34155	059	2720	14731	0824	02094	0925
0700	0328	34235	054	2727	14743	0914	02695	0860
0800	0315	34303	056	2734	14755	0998	03342	0802
1000	0285	34389	055	2743	14777	1152	04759	0719
1200	0260	34442	058	2750	14800	1292	06341	0664
1500	0230	34505	079	2757	14839	1484	08999	0599
2000	0194	34583	133	2766	14909	1769	14089	0522

C-REF-NO 010	YR 1967	DEPTH C 4206	WAVES 1 1632	AIR T 05.9	VIS 7
CONS. NO 006	MONTH 12	MXSAMPD 05	WAVES 2 2255	WET B 04.4	STN 506
LAT 49-59 N	DAY 23	NO.DPTH 15	WND-DIR 160	WW-CODE 02	
LON 145-08 W	HR 23.8	W-COLOR 00	WND-SPD 06	CLD-TPE 6	
MARSD SQ 159	C/I 1802	W-TRNSP 20	BARO 1001.1	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
238	0000	050 B	32607	712	2580	14678
238	0010	0527	32583	709	2575	14691
238	0020	0529	32584	704	2575	14693
238	0030	0528	32582	706	2575	14694
238	0050	0526	32582	708	2575	14697
238	0075	0523	32583	704	2576	14700
238	0100	0524	32584	707	2576	14704
238	0125	0394	32934	620	2617	14659
238	0150	0389	33302	466	2647	14666
238	0175	0388	33597	347	2671	14673
238	0200	0388	33693	297	2678	14679
238	0250	0385	33811	216	2688	14687
238	0300	0380 B	33870	177	2693	14694
238	0400	0359	33983	119	2704	14703
238	0500	0353	34073	082	2712	14719

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0500 B	32607	712	2580	14678	0000	00000	2203
0010	0527	32583	709	2575	14691	0022	00001	2251
0020	0529	32584	704	2575	14693	0045	00005	2253
0030	0528	32582	706	2575	14694	0068	00010	2254
0050	0526	32582	708	2575	14697	0113	00029	2254
0075	0523	32583	704	2576	14700	0170	00065	2252
0100	0524	32584	707	2576	14704	0227	00116	2255
0125	0394	32934	620	2617	14659	0278	00176	1860
0150	0389	33302	466	2647	14666	0322	00236	1580
0175	0388	33597	347	2671	14673	0359	00298	1360
0200	0388	33693	297	2678	14679	0392	00362	1289
0225	0387	33762	252	2684	14683	0424	00431	1239
0250	0385	33811	216	2688	14687	0455	00506	1202
0300	0380 B	33870	177	2693	14694	0514	00674	1157
0400	0359	33983	119	2704	14703	0626	01073	1058
0500	0353	34073	082	2712	14719	0729	01550	0992

C-REF-NO 010	YR 1967	DEPTH C 4206	WAVES 1 2222	AIR T 04.9	VIS 1
CONS. NO 007	MONTH 12	MXSAMPD 06	WAVES 2 2045	WET B 04.7	STN 507
LAT 50-02 N	DAY 27	NO.DPTH 16	WND-DIR 210	WW-CODE 43	
LON 145-04 W	HR 19.6	W-COLOR 00	WND-SPD 09	CLD-TPE	
MARSD SQ 195	C/I 1802	W-TRNSP 20	BARO 1029.2	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
196	0000	049 B	32587	722	2580	14674
196	0010	0521	32590	713	2577	14688
196	0020	0523	32587	710	2576	14691
196	0029	0522	32586	710	2576	14692
196	0048	0521	32590	710	2577	14695
196	0073	0520	32588	712	2577	14698
196	0097	0517	32589	712	2577	14701
196	0121	0408	32834	657	2608	14663
196	0146	0389	33297	475	2647	14665
196	0170	0391 B	33606	347	2671	14674
196	0194	0389	33696	299	2678	14678
196	0241	0392	33816	220	2688	14689
196	0289	0376	33880	172	2694	14691
196	0384	0360	33971	124	2703	14701
196	0486	0353	34067	081	2711	14716
196	0594	0340 B	34151	063	2719	14730

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0490 B	32587	722	2580	14674	0000	00000	2207
0010	0521	32590	713	2577	14688	0022	00001	2239
0020	0523	32587	710	2576	14691	0045	00005	2244
0030	0522	32586	710	2576	14692	0068	00010	2245
0050	0521	32590	710	2577	14695	0113	00029	2243
0075	0522	32583	713	2576	14699	0169	00065	2251
0100	0504 B	32608	710	2580	14696	0225	00116	2215
0125	0401	3291 C	630 B	2614	14661	0277	00175	1888
0150	0389	33361	449	2652	14666	0320	00235	1536
0175	0391 B	3364 B	333	2673	14675	0356	00295	1334
0200	0390	33715	287	2680	14680	0389	00358	1275
0225	0392	33783	244	2685	14686	0421	00427	1228
0250	0390	33831	209	2689	14689	0451	00501	1192
0300	0373	33892	165	2695	14692	0510	00666	1134
0400	0359	33987	116	2704	14703	0620	01062	1055
0500	0349	34076	080	2712	14717	0723	01536	0986
0600	0340 B	34155	062	2720	14730	0820	02080	0924

C-REF-NO 010	YR 1967	DEPTH C 4206	WAVES 1 1722	AIR T 07.2	VIS 7	
CONS. NO 008	MONTH 12	MXSAMPD 42	WAVES 2 2466	WET B 06.6	STN 508	
LAT 50-00 N	DAY 29	NO.DPTH 26	WND-DIR 140	WW-CODE 02		
LON 145-04 W	HR 19.2	W-COLOR 00	WND-SPD 08	CLD-TPE 3		
MARSD SQ 195	C/I 1802	W-TRNSP 20	BARO 1034.8	CLD-AMT 1	HW	

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
192	0000	052 B	32580	722	2576	14686
192	0010	0536 B	32574	726	2574	14694
192	0020	0537	32579	705	2574	14696
192	0030	0535	32575	691	2574	14697
192	0050	0534	32576	717	2574	14700
192	0075	0529	32584	692	2575	14702
192	0100	0523	32630	703	2580	14704
192	0125	0393	32984	602	2621	14659
192	0150	0389	33356	453	2651	14666
192	0175	0386	33602	362	2671	14673
192	0200	0390	33709	301	2679	14680
192	0250	0392	33817	221	2688	14690
192	0300	0373	33873	171	2694	14691
192	0400	0360	33997	118	2705	14704
192	0500	0352	34075	085	2712	14718
192	0600	0340	34169	060	2721	14731
206	0793	0316	34296	056	2733	14754
206	0993	0288	34370	063	2742	14777
206	1192	0262 B	34441	065	2749	14800
206	1484	0232	34502	081	2757	14837
206	1973	0196	34583	126	2766	14905
206	2468	0174	34623	192	2771	14981
206	2968	0159	34656	251	2775	15061
206	3471	0154 B	34668	293	2776	15147
206	3975	0151	34674	321	2777	15234
206	4180	0151 B	34638	301	2774	15270

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0520 B	32580	722	2576	14686	0000	00000	2244
0010	0536 B	32574	726	2574	14694	0023	00001	2267
0020	0537	32579	705	2574	14696	0046	00005	2265
0030	0535	32575	691	2574	14697	0068	00011	2267
0050	0534	32576	717	2574	14700	0114	00029	2267
0075	0529	32584	692	2575	14702	0171	00066	2258
0100	0523	32630	703	2580	14704	0227	00116	2220
0125	0393	32984	602	2621	14659	0278	00174	1821
0150	0389	33356	453	2651	14666	0320	00234	1540
0175	0386	33602	362	2671	14673	0357	00294	1354

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0200	0390	33709	301	2679	14680	0390	00358	1279
0225	0393	3378 B	256	2684	14686	0422	00427	1235
0250	0392	33817	221	2688	14690	0453	00502	1204
0300	0373	33873	171	2694	14691	0512	00669	1147
0400	0360	33997	118	2705	14704	0623	01065	1049
0500	0352	34075	085	2712	14718	0726	01539	0990
0600	0340	34169	060	2721	14731	0822	02081	0915
0700	0328	34243	054	2728	14743	0911	02677	0854
0800	0315	34299	056	2733	14755	0995	03323	0805
1000	0287	34373	063	2742	14778	1151	04758	0733
1200	0261 B	34443	065	2750	14801	1292	06354	0664
1500	0231	34505	082	2757	14839	1485	09015	0600
2000	0195	34586	129	2767	14909	1769	14099	0520
2500	0173	34626	196	2771	14986	2025	20006	0482
3000	0159	34657	254	2775	15067	2264	26799	0456
3500	0154 B	34670	296	2776	15152	2497	34635	0455
4000	0151	3466 B	312 B	2776	15239	2734	43867	0471

C-REF-NO 010	YR 1968	DEPTH C 4206	WAVES 1 1822	AIR T		VIS 4
CONS. NO 009	MONTH 1	MXSAMPD 05	WAVES 2 2643	WET B		STN 509
LAT 49-59 N	DAY 02	NO.DPTH 15	WND-DIR 180	WW-CODE	41	
LON 145-02 W	HR 19.4	W-COLOR 00	WND-SPD 07	CLD-TPE	7	
MARSD SQ 159	C/I 1802	W-TRNSP 19	BARO 1021.3	CLD-AMT	8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
194	0000	052 B	32583	727	2576	14686
194	0010	0537	32577	733	2574	14695
194	0020	0538	32577	723	2574	14697
194	0030	0535	32578	724	2574	14697
194	0050	0527	32584	723	2575	14697
194	0075	0522	32591	721	2577	14699
194	0100	0515	32608	720	2579	14701
194	0125	0464	32720	693	2593	14685
194	0150	0390	33093	562	2630	14663
194	0175	0384	33473	404	2661	14670
194	0200	0386	33647	331	2675	14677
194	0250	0379	33779	232	2686	14684
194	0300	0376 B	33878	173	2694	14693
194	0400	0357	34004	110	2706	14703
194	0500	0348	34104	075	2715	14717

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0520 B	32583	727	2576	14686	0000	00000	2242
0010	0537	32577	733	2574	14695	0023	00001	2266
0020	0538	32577	723	2574	14697	0045	00005	2268
0030	0535	32578	724	2574	14697	0068	00011	2265
0050	0527	32584	723	2575	14697	0114	00029	2254
0075	0522	32591	721	2577	14699	0170	00065	2245
0100	0515	32608	720	2579	14701	0227	00116	2227
0125	0464	32720	693	2593	14685	0281	00178	2091
0150	0390	33093	562	2630	14663	0329	00246	1738
0175	0384	33473	404	2661	14670	0369	00312	1449
0200	0386	33647	331	2675	14677	0404	00379	1322
0225	0383	3373 D	275	2682	14681	0437	00450	1257
0250	0379	33779	232	2686	14684	0468	00526	1220
0300	0376 B	33878	173	2694	14693	0528	00694	1147
0400	0357	34004	110	2706	14703	0638	01088	1041
0500	0348	34104	075	2715	14717	0739	01554	0964

C-REF-NO 010	YR 1968	DEPTH C 4206	WAVES 1 3622	AIR T 03.4	VIS	
CONS. NO 010	MONTH 1	MXSAMPD 20	WAVES 2 2745	WET B 02.4	STN 510	
LAT 50-00 N	DAY 03	NO.DPTH 21	WND-DIR 360	WW-CODE 60		
LON 145-00 W	HR 19.3	W-COLOR	WND-SPD 12	CLD-TPE		
MARSD SQ 195	C/I 1802	W-TRNSP	BARO 1029.2	CLD-AMT	Hw	

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
193	0000	048 B	32579		2580	14670
193	0010	0534	32574		2574	14693
193	0020	0536	32575		2574	14696
193	0030	0534	32576		2574	14697
193	0050	0527	32583		2575	14697
193	0075	0517	32591		2577	14697
193	0100	0510	32615		2580	14699
193	0125	0406	32863		2610	14663
193	0150	0402	33332		2648	14672
193	0175	0408	33575		2667	14682
193	0200	0396	33682		2677	14682
193	0250	0392	33797		2686	14690
193	0300	0376 B	33873		2694	14693
193	0400	0355	33992		2705	14702
193	0500	0347	34102		2715	14716
193	0600	0339 B	34164	060	2720	14730
202	0795	0317	34292	055	2733	14755
202	0992	0288	34378	054	2742	14777
202	1190	0262	34441	063	2749	14800
202	1486	0232	34501	077	2757	14837
202	1978	0194	34581	136	2766	14905

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0480 B	32579	121 I	2580	14670	0000	00000	2203
0010	0534	32574		2574	14693	0022	00001	2265
0020	0536	32575		2574	14696	0045	00005	2267
0030	0534	32576		2574	14697	0068	00011	2265
0050	0527	32583		2575	14697	0114	00029	2254
0075	0517	32591		2577	14697	0170	00065	2240
0100	0510	32615		2580	14699	0226	00116	2217
0125	0406	32863		2610	14663	0278	00175	1925
0150	0402	33332		2648	14672	0322	00237	1571
0175	0408	33575		2667	14681	0360	00299	1396
0200	0396	33682		2677	14682	0394	00364	1306
0225	0393	3375 B		2682	14686	0426	00435	1254
0250	0392	33797		2686	14690	0457	00511	1219
0300	0376 B	33873		2694	14693	0517	00679	1150
0400	0355	33992		2705	14702	0628	01075	1048

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0500	0347	34102		2715	14716	0729	01543	0965
0600	0339 B	34164	060	2720	14730	0825	02079	0917
0700	0329	34232	056	2727	14743	0914	02679	0863
0800	0316	34295	055	2733	14756	0999	03330	0810
1000	0287	34381	054	2743	14778	1155	04762	0727
1200	0261	34443	063	2750	14801	1296	06351	0664
1500	0230	3451 B	081	2758	14839	1487	08999	0595
2000	0193	34583	139	2767	14908	1770	14063	0520

C-REF-NO 010	YR 1968	DEPTH C 4206	WAVES 1 1922	AIR T 06.7	VIS 7
CONS. NO 011	MONTH 1	MXSAMPD 05	WAVES 2 2867	WET B 05.9	STN 511
LAT 50-00 N	DAY 05	NO.DPTH 15	WND-DIR 190	WW-CODE 02	
LON 145-00 W	HR 19.2	W-COLOR 00	WND-SPD 07	CLD-TPE 6	
MARSD SQ 195	C/I 1802	W-TRNSP 19	BARO 1028.8	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
192	0000	050 B	32533	733	2574	14677
192	0008	0527	32575	728	2575	14690
192	0014	0529	32575	728	2575	14692
192	0022	0528	32575	726	2575	14693
192	0038	0527	32578	728	2575	14695
192	0059	0521	32592	714	2577	14696
192	0079	0545 B	32580	718	2573	14709
192	0099	0530	32587		2575	14707
192	0120	0524	32600	715	2577	14708
192	0141	0503	32670	703	2585	14703
192	0162	0405	33000	602	2621	14670
192	0204	0392 B	33655	333	2675	14681
192	0250	0380	33773	241	2685	14685
192	0352	0367	33941	141	2700	14698
192	0456	0354	34065	094	2711	14712

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0500 B	32533	733	2574	14677	0000	00000	2258
0010	0529	32577	728	2575	14691	0023	00001	2257
0020	0528	32575	727	2575	14693	0045	00005	2259
0030	0528	32576	727	2575	14694	0068	00010	2259
0050	0522	32587	720	2576	14695	0114	00029	2246
0075	0541 B	32583	717	2574	14707	0170	00066	2272
0100	0530	32587	719	2575	14707	0227	00117	2259
0125	0523	3260 B	717	2577	14708	0284	00182	2243
0150	0462 C	3280 D	667	2599	14690	0338	00258	2034
0175	0388 D	3323 F	514 C	2642	14668	0384	00334	1634
0200	0388 C	3360 C	357 B	2671	14678	0422	00406	1356
0225	0386	3375 H	276 C	2683	14683	0455	00478	1247
0250	0380	33773	241	2685	14685	0486	00554	1225
0300	0372	33866	180 B	2693	14691	0546	00722	1152
0400	0359	3402 B	101 B	2707	14704	0656	01116	1034

C-REF-NO 010	YR 1968	DEPTH C 4206	WAVES 1 0122	AIR T 04.9	VIS 7
CONS. NO 012	MONTH 1	MXSAMPD 42	WAVES 2 3634	WET B 02.1	STN 512
LAT 49-57 N	DAY 07	NO.DPTH 26	WND-DIR 010	WW-CODE 02	
LON 144-59 W	HR 19.2	W-COLOR 00	WND-SPD 08	CLD-TPE 8	
MARSD SQ 159	C/I 1802	W-TRNSP 20	BARO	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
192	0000	047 B	32596	719	2583	14666
192	0010	0522	32577	729	2575	14689
192	0020	0524	32583	707	2576	14691
192	0030	0523	32580	725	2576	14692
192	0050	0522	32580	725	2576	14695
192	0075	0522	32586	709	2576	14699
192	0100	0511	32605	678	2579	14699
192	0125	0412	32901	619	2613	14666
192	0150	0391	33347	452	2650	14667
192	0175	0392 B	33630	352	2673	14676
192	0200	0383	33724	274	2681	14677
192	0250	0386 B	33824	211	2689	14688
192	0300	0372	33887	137	2695	14691
192	0400	0360	34005	104	2706	14704
192	0500	0348	34105	074	2715	14717
192	0600	0337	34188	057	2723	14730
206	0800	0307	34310	060	2735	14752
206	1000	0285	34387	056	2743	14777
206	1200	0261	34440	062	2749	14801
206	1500	0229	34506	080	2757	14838
206	2000	0193 B	34581	135	2766	14908
206	2500	0173	34620	198	2771	14986
206	3000	0158 B	34649	256	2774	15066
206	3500	0153 B	34663	297	2776	15151
206	4000	0152	34674	321	2777	15239
206	4200	0151				

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0470 B	32596	719	2583	14666	0000	00000	2180
0010	0522	32577	729	2575	14689	0022	00001	2250
0020	0524	32583	707	2576	14691	0045	00005	2248
0030	0523	32580	725	2576	14692	0068	00010	2250
0050	0522	32580	725	2576	14695	0113	00029	2251
0075	0522	32586	709	2576	14699	0169	00065	2249
0100	0511	32605	678	2579	14699	0226	00116	2225
0125	0412	32901	619	2613	14666	0278	00175	1902
0150	0391	33347	452	2650	14667	0321	00236	1548
0175	0392 B	33630	352	2673	14675	0358	00296	1339

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0200	0383	33724	274	2681	14677	0390	00359	1261
0225	0384 B	33784	235 B	2686	14682	0422	00427	1219
0250	0386 B	33824	211	2689	14688	0452	00502	1193
0300	0372	33887	137	2695	14691	0511	00667	1136
0400	0360	34005	104	2706	14704	0621	01060	1043
0500	0348	34105	074	2715	14717	0722	01526	0963
0600	0337	34188	057	2723	14730	0816	02056	0897
0700	0322	34255	056	2729	14741	0904	02641	0838
0800	0307	34310	060	2735	14752	0986	03274	0789
1000	0285	34387	056	2743	14777	1139	04682	0721
1200	0261	34440	062	2749	14801	1279	06268	0667
1500	0229	34506	080	2757	14838	1472	08927	0598
2000	0193 B	34581	135	2766	14908	1756	14010	0522
2500	0173	34620	198	2771	14986	2013	19954	0487
3000	0158 B	34649	256	2774	15066	2255	26816	0461
3500	0153 B	34663	297	2776	15151	2490	34731	0459
4000	0152	34674	321	2777	15239	2726	43914	0463

SECTION IV

Bathythermograms

EXPLANATION OF DATA HEADINGS IN TABLES 1 AND 2

CON No:		The consecutive BT slide number.
LAT:	Deg	Position of platform at time of BT lowering.
	Min	
LONG:		
DATE:	Day	Day
	Mon	Month
	Yr	Year
GMT:	Hrs	The Greenwich Mean Time at which the BT lowering was made.
	Min	
DEPTH:	Metres	Depth to bottom in metres, as read from U.S. Coast and Geodetic Survey Chart 8500.
BAR:	Mbs	Barometric pressure; prefix all listed values by 10 or by 9 if a minus (-) sign is present to obtain the pressure in whole millibars.

eg. 02 = 1002 mbs
17 = 1017 mbs
-98 = 998 mbs
-86 = 986 mbs

WW Code:		Refer to Table 7, Section II
WIND Amt:		Wind speed in meters per second
W-1:	P	Waves 1 and 2. Refer to Tables 4&5, Section II
	H	
W-2:		
CLOUD:	T	Refer to Tables 8&9, Section II
	A	

CCGS "VANCOUVER" 02-67-010

BATHYTHERMOGRAMS

TABLE 1

CON No	LAT		LONG		DATE			GMT		DEPTH	BAR	WW	WIND	W-1		W-2		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min	Metres	Mbs	Code	Amt	P	H	P	H	T	A
001	49	57	144	20	09	12	67	21	00	4206	04	02	30	23		59		6	7
002	50	00	144	28	10	12	67	00	00	4206	07	02	32	34		58		8	6
003	49	58	144	40	10	12	67	03	00	4206	09	01	29	34		68		8	4
004	50	00	144	42	10	12	67	06	00	4206	12	02	28	34		XX		8	4
005	50	00	144	52	10	12	67	09	00	4206	15	02	31	46		XX		8	4
006	50	00	145	10	10	12	67	12	00	4206	19	27	29	57		XX		9	5
007	50	03	145	23	10	12	67	15	00	4206	22	02	30	49		XX		8	3
008	50	02	145	41	10	12	67	18	00	4206	25	16	29	59		XX		8	5
009	49	57	145	18	10	12	67	21	00	4206	28	02	21	46		48		8	5
010	50	01	145	12	11	12	67	03	00	4206	31	02	23	45		56		6	1
011	50	03	145	14	11	12	67	06	00	4206	31	01	25	35		56		8	2
012	49	59	145	03	11	12	67	09	00	4206	33	02	28	35		56		8	1
013	50	01	144	57	11	12	67	12	00	4206	34	03	20	34		XX		8	2
014	50	01	144	50	11	12	67	15	00	4206	34	03	21	34		XX		6	6
015	49	56	145	04	11	12	67	18	00	4206	34	02	21	34		45		6	7
016	49	58	145	05	11	12	67	21	30	4206	33	02	22	34		45		6	8
017	49	59	145	03	12	12	67	00	00	4206	32	02	28	34		45		6	8
018	50	03	144	59	12	12	67	03	00	4206	30	02	30	34		45		6	8
019	50	00	145	00	15	12	67	00	00	4206	14	02	15	33		45		6	8
020	50	03	144	48	15	12	67	03	00	4206	17	02	18	34		47		6	6
021	50	03	145	01	15	12	67	06	00	4206	20	01	17	33		47		6	1
022	50	06	145	00	15	12	67	09	00	4206	23	02	16	33		47		8	1
023	50	03	144	59	15	12	67	12	00	4206	26	02	16	33		46		0	0
024	50	11	144	54	15	12	67	15	00	4206	28	02	18	23		44		0	0
025	50	01	145	01	15	12	67	18	30	4206	29	02	20	23		45		0	0

TABLE 1

CON No	LAT Deg	LAT Min	LONG Deg	LONG Min	DATE Day	DATE Mon	DATE Yr	GMT Hrs	GMT Min	DEPTH Metres	BAR Mbs	WW Code	WIND Amt	W-1 P	W-1 H	W-2 P	W-2 H	CLOUD T	CLOUD A
026	50	01	145	01	15	12	67	21	30	4206	31	03	20	23		44		3	4
027	50	06	144	57	16	12	67	00	00	4206	32	03	20	23		55		3	8
028	50	07	144	59	16	12	67	03	00	4206	34	01	11	23		55		6	4
029	50	00	145	00	16	12	67	06	00	4206	36	02	07	23		XX		6	4
030	50	01	144	55	16	12	67	09	00	4206	36	03	00	20		XX		4	8
031	50	03	144	52	16	12	67	12	00	4206	35	02	06	21		46		4	8
032	50	03	144	49	16	12	67	15	00	4206	33	61	15	34		XX		7	8
033	49	59	144	54	16	12	67	18	00	4206	29	61	20	32		44		7	8
034	50	04	144	56	16	12	67	21	00	4206	21	71	29	34		44		X	9
035	50	02	145	04	17	12	67	18	00	4206	29	03	28	35		34		8	5
036	49	51	144	54	17	12	67	21	00	4206	30	02	26	46		34		8	6
037	49	54	144	58	18	12	67	00	00	4206	30	02	29	46		35		8	4
038	50	01	145	03	18	12	67	03	00	4206	30	02	26	46		34		8	4
039	50	06	145	05	18	12	67	06	00	4206	30	85	23	35		34		8	7
040	50	03	144	58	18	12	67	09	00	4206	31	02	18	24		34		6	8
041	50	00	144	52	18	12	67	12	00	4206	29	02	18	23		44		6	7
042	50	01	144	51	18	12	67	15	00	4206	29	02	17	33		44		8	7
043	49	59	144	59	18	12	67	18	30	4206	29	02	17	22		44		6	8
044	50	00	144	35	18	12	67	21	00	4206	29	02	17	22		44		6	8
045	50	00	144	50	19	12	67	00	00	4206	27	02	12	22		44		6	8
046	49	57	144	50	19	12	67	03	00	4206	27	02	14	22		34		8	8
047	50	00	144	59	19	12	67	06	00	4206	26	02	10	23		XX		6	8
048	49	57	144	57	19	12	67	09	00	4206	26	61	07	22		XX		7	8
049	49	58	144	56	19	12	67	12	00	4206	24	69	03	20		XX		7	8
050	50	00	144	54	19	12	67	15	00	4206	22	71	00	10		43		1	9

TABLE 1

CON No	LAT		LONG		DATE			GMT		DEPTH	BAR	WW	WIND	W-1		W-2		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min	Metres	Mbs	Code	Amt	P	H	P	H	T	A
051	49	58	145	00	19	12	67	18	30	4206	21	71	05	21		42		7	8
053	49	54	145	05	20	12	67	03	00	4206	16	61	29	23		23		7	8
054	49	55	145	11	20	12	67	06	00	4206	13	68	31	34		23		7	8
055	50	00	144	38	20	12	67	18	45	4206	00	61	13	34		23		7	8
056	49	58	144	50	20	12	67	21	00	4206	-99	51	14	23		34		7	9
057	50	00	145	03	21	12	67	00	00	4206	-97	51	08	22		34		7	9
058	50	04	145	04	21	12	67	03	00	4206	-95	10	05	34		22		7	8
059	50	05	145	03	21	12	67	06	00	4206	-93	58	13	22		34		7	8
060	49	59	145	01	21	12	67	09	00	4206	-89	58	18	23		XX		7	8
061	49	58	145	01	21	12	67	12	00	4206	-86	51	13	23		XX		7	8
062	50	03	145	03	21	12	67	15	00	4206	-85	10	26	24		XX		7	8
063	50	02	145	04	21	12	67	18	00	4206	-84	10	24	22		34		7	8
064	49	54	145	12	21	12	67	21	00	4206	-83	01	25	22		45		6	7
065	49	51	145	17	22	12	67	00	00	4206	-82	10	21	22		45		6	8
066	49	57	145	15	22	12	67	03	00	4206	-81	01	20	22		45		6	7
067	50	01	145	03	22	12	67	06	00	4206	-81	03	22	23		XX		7	8
068	50	02	145	07	22	16	67	09	00	4206	-80	02	21	45		XX		6	7
069	50	03	145	12	22	12	67	12	00	4206	-78	01	20	45		XX		6	3
070	50	08	145	15	22	12	67	15	00	4206	-77	03	23	35		XX		6	6
071	50	08	145	18	22	12	67	18	00	4206	-75	21	29	46		55		7	8
072	50	00	145	18	22	12	67	21	00	4206	-76	02	27	46		55		6	7
073	49	59	145	08	24	12	67	00	00	4206	12	02	12	55		32		6	8
074	50	03	145	07	24	12	67	03	00	4206	12	02	15	33		45		7	8
075	50	02	145	03	24	12	67	06	00	4206	10	61	27	24		XX		7	8
076	50	06	145	07	24	12	67	09	00	4206	08	61	23	24		XX		7	8

TABLE 1

CON No	LAT Deg	LAT Min	LONG Deg	LONG Min	DATE Day	DATE Mon	DATE Yr	GMT Hrs	GMT Min	DEPTH Metres	BAR Mbs	WW Code	WIND Amt	W-1 P	W-1 H	W-2 P	W-2 H	CLOUD T	CLOUD A
077	50	05	145	06	24	12	67	12	00	4206	07	10	17	23		XX		7	8
078	50	13	145	08	24	12	67	15	00	4206	07	51	16	23		XX		7	8
079	50	01	145	00	24	12	67	18	00	4206	10	45	20	22		44		7	9
080	50	03	145	04	24	12	67	21	00	4206	11	45	17	22		44		1	9
081	50	03	145	06	25	12	67	00	00	4206	11	43	18	22		44		7	9
082	50	10	145	10	25	12	67	03	00	4206	13	51	17	22		54		7	9
083	50	02	145	00	25	12	67	06	00	4206	14	45	18	33		XX		7	9
084	50	02	145	03	25	12	67	09	00	4206	15	45	20	33		XX		7	9
085	50	08	145	07	25	12	67	12	00	4206	16	51	19	33		XX		7	9
086	50	10	145	10	25	12	67	15	00	4206	15	45	21	33		XX		7	9
087	50	00	145	01	25	12	67	18	00	4206	16	28	29	35		XX		7	8
088	50	01	145	04	27	12	67	03	00	4206	23	45	23	34		69		X	9
089	50	05	145	04	27	12	67	06	00	4206	24	45	23	34		56		X	9
090	50	10	145	06	27	12	67	09	00	4206	24	51	26	56		34		7	8
091	50	07	145	06	27	12	67	12	00	4206	25	51	28	56		34		X	9
092	50	00	145	00	27	12	67	15	00	4206	26	45	32	57		45		X	9
093	50	03	145	04	27	12	67	18	00	4206	29	44	19	23		45		3	2
094	50	02	145	05	27	12	67	21	00	4206	31	45	15	23		45		X	9
095	49	59	145	02	28	12	67	00	00	4206	32	46	14	23		44		0	5
096	50	03	145	01	28	12	67	03	00	4206	33	02	12	22		45		0	3
097	50	05	145	02	28	12	67	06	00	4206	34	47	10	22		XX		X	9
098	50	03	145	02	28	12	67	09	00	4206	36	51	09	22		XX		7	7
099	50	03	145	01	28	12	67	12	00	4206	37	51	14	22		56		7	7
100	50	01	145	04	28	12	67	15	00	4206	37	51	10	22		XX		7	7
101	49	58	145	08	28	12	67	18	30	4206	38	42	09	22		33		7	8

TABLE 1

CON No	LAT		LONG		DATE			GMT		DEPTH	BAR	WW	WIND	W-1		W-2		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min	Metres	Mbs	Code	Amt	P	H	P	H	T	A
102	50	01	144	59	28	12	67	21	00	4206	39	10	12	22		64			0
103	50	01	144	59	29	12	67	00	00	4206	39	10	11	22		44		3	3
104	50	01	145	02	29	12	67	03	00	4206	39	03	08	22		44		3	6
105	50	00	145	00	29	12	67	06	00	4206	39	02	11	32		44		2	4
106	50	03	145	02	29	12	67	09	00	4206	39	02	12	32		44		3	2
107	50	01	144	59	29	12	67	12	00	4206	39	02	10	32		43		3	2
108	49	59	145	02	29	12	67	15	00	4206	38	01	11	22		54		3	1
109	50	00	145	00	29	12	67	18	00	4206	38	02	13	22		53		3	1
110	50	02	145	03	29	12	67	21	00	4206	38	02	17	22		55		3	1
111	50	00	145	00	30	12	67	00	00	4206	37	02	18	22		66		0	2
112	50	04	145	02	30	12	67	03	00	4206	37	41	18	22		65		7	7
113	50	00	145	00	30	12	67	06	00	4206	37	28	17	22		54		7	8
114	50	03	145	02	30	12	67	09	00	4206	36	44	16	33		54		7	8
115	50	01	145	03	30	12	67	12	00	4206	36	45	20	33		54		X	9
116	50	05	145	02	30	12	67	15	00	4206	35	44	16	33		54		6	7
117	50	00	145	00	30	12	67	18	15	4206	35	47	14	22		54		X	9
118	50	03	145	00	30	12	67	21	00	4206	35	02	20	23		54		6	8
119	50	00	145	03	31	12	67	00	00	4206	34	02	20	23		54		6	8
120	50	04	145	02	31	12	67	03	00	4206	34	28	16	22		43		7	8
121	50	00	145	00	31	12	67	06	00	4206	34	02	22	22		XX		7	8
122	50	05	144	57	31	12	67	09	00	4206	34	02	16	22		XX		7	8
123	50	01	145	01	31	12	67	12	00	4206	34	51	17	22		XX		7	8
124	50	06	144	59	31	12	67	15	00	4206	33	51	14	22		XX		X	9
125	50	00	145	00	31	12	67	18	00	4206	34	51	14	22		33		X	9
126	50	02	144	59	31	12	67	21	00	4206	34	45	08	22		33		X	9

TABLE 1

CON No	LAT Deg	LAT Min	LONG Deg	LONG Min	DATE Day	DATE Mon	DATE Yr	GMT Hrs	GMT Min	DEPTH Metres	BAR Mbs	WW Code	WIND Amt	W-1 P	W-1 H	W-2 P	W-2 H	CLOUD T	CLOUD A
127	50	00	145	02	01	01	68	00	00	4206	33	10	10	22		33		6	5
128	50	02	145	01	01	01	68	03	00	4206	33	02	06	22		33		6	8
129	50	00	145	01	01	01	68	06	00	4206	32	02	13	22		32		6	3
130	50	02	145	01	01	01	68	09	00	4206	30	02	16	32		32		6	1
131	50	00	145	04	01	01	68	12	00	4206	30	47	14	32		32		X	9
132	50	01	145	05	01	01	68	15	00	4206	28	45	13	32		XX		X	9
133	49	59	145	00	01	01	68	18	00	4206	29	28	16	22		54		7	8
134	50	00	145	01	01	01	68	21	00	4206	28	47	16	22		54		X	9
135	50	01	145	01	02	01	68	00	00	4206	26	44	14	22		54		7	8
136	50	06	145	02	02	01	68	03	00	4206	26	03	15	22		54		7	8
137	50	01	145	00	02	01	68	06	00	4206	26	44	20	22		43		7	8
138	50	04	145	02	02	01	68	09	00	4206	26	44	16	22		43		7	8
139	50	00	145	00	02	01	68	12	00	4206	24	44	17	22		53		7	7
140	50	04	145	01	02	01	68	15	00	4206	24	51	11	22		64		7	8
141	50	00	145	00	02	01	68	18	00	4206	24	45	19	23		54		X	9
142	50	00	145	03	02	01	68	21	00	4206	23	28	16	22		54		7	8
143	50	00	145	03	03	01	68	00	00	4206	22	44	16	23		54		7	8
144	50	03	145	02	03	01	68	03	00	4206	23	51	15	22		54		7	8
145	49	59	145	01	03	01	68	06	00	4206	23	51	17	22		44		7	8
146	50	00	145	00	03	01	68	09	00	4206	23	51	10	22		XX		7	8
147	50	01	145	00	03	01	68	12	00	4206	25	51	21	22		XX		7	8
148	50	01	144	53	03	01	68	15	00	4206	26	51	23	22		XX		7	8
149	50	00	145	00	03	01	68	18	00	4206	29	51	22	22		35		7	8
150	49	58	144	58	03	01	68	21	00	4206	31	61	16	22		35		7	5
151	50	01	144	59	04	01	68	00	00	4206	31	61	10	22		35		7	4

TABLE 1

CON No	LAT		LONG		DATE			GMT		DEPTH	BAR	WW	WIND	W-1		W-2		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min	Metres	Mbs	Code	Amt	P	H	P	H	T	A
152	50	00	144	55	04	01	68	03	00	4206	33	02	18	22		55		6	8
153	50	00	145	00	04	01	68	06	00	4206	34	02	17	32		53		4	5
154	49	57	144	58	04	01	68	09	00	4206	35	02	10	31		52		3	3
155	49	56	144	59	04	01	68	12	00	4206	36	02	13	32		54		6	2
156	49	58	144	58	04	01	68	15	00	4206	35	02	13	22		53		6	1
157	50	00	145	01	04	01	68	18	00	4206	37	03	13	22		55		6	7
158	49	58	145	02	04	01	68	21	00	4206	36	02	15	22		55		6	8
159	49	59	144	58	05	01	68	00	00	4206	35	03	18	22		55		6	8
160	50	00	145	01	05	01	68	03	00	4206	35	51	15	22		55		7	8
161	50	00	145	01	05	01	68	06	00	4206	35	10	17	22		64		7	8
162	49	59	145	05	05	01	68	09	00	4206	34	10	16	32		54		7	8
163	50	00	145	00	05	01	68	12	00	4206	33	45	14	32		54		X	9
164	50	02	145	04	05	01	68	15	00	4206	31	44	11	32		44		7	8
165	50	00	145	00	05	01	68	18	00	4206	31	02	14	22		54		6	7
166	50	00	145	02	05	01	68	21	00	4206	30	02	11	22		54		7	5
167	49	59	145	03	06	01	68	00	00	4206	27	02	10	21		54		7	6
168	50	03	145	02	06	01	68	03	00	4206	26	45	07	21		54		X	9
169	50	01	145	00	06	01	68	06	00	4206	26	45	03	22		XX		X	9
170	49	55	145	00	06	01	68	09	00	4206	25	51	17	22		XX		X	9
171	50	00	144	59	06	01	68	12	00	4206	24	10	20	22		64		6	7
172	49	59	144	57	06	01	68	15	00	4206	24	10	17	22		XX		6	7
173	50	01	144	59	06	01	68	18	00	4206	24	02	15	22		44		6	7
174	49	58	144	55	06	01	68	21	00	4206	24	02	13	22		54		6	7
175	49	59	144	58	07	01	68	06	00	4206	23	02	19	22		34		6	5
176	50	01	144	55	07	01	68	03	00	4206	23	01	17	22		53		8	3

TABLE 1

CON No	LAT Deg	LAT Min	LONG Deg	LONG Min	DATE Day	DATE Mon	DATE Yr	GMT Hrs	GMT Min	DEPTH Metres	BAR Mbs	WW Code	WIND Amt	W-1 P	W-1 H	W-2 P	W-2 H	CLOUD T	CLOUD A
177	50	00	145	00	07	01	68	06	00	4206	24	02	13	22		53		6	7
178	49	56	144	55	07	01	68	09	00	4206	24	02	14	22		52		6	3
179	49	59	144	58	07	01	68	12	00	4206	24	02	18	32		42		6	2
180	49	54	144	53	07	01	68	15	00	4206	23	02	19	32		XX		6	2
181	50	00	145	00	07	01	68	18	00	4206	24	03	15	22		55		8	6
182	49	56	145	00	07	01	68	21	00	4206	24	02	15	22		34		8	6
183	49	58	144	58	08	01	68	00	00	4206	22	03	20	22		45		8	4
184	49	51	144	56	08	01	68	03	00	4206	21	02	19	22		45		8	4
185	50	01	145	00	08	01	68	06	00	4206	21	03	20	22		44		6	3
186	49	56	144	54	08	01	68	09	00	4206	21	02	15	32		44		8	4
187	50	00	145	00	08	01	68	12	00	4206	20	02	18	22		44		6	5
188	49	56	144	56	08	01	68	15	00	4206	18	02	19	55		42		6	8
189	49	58	144	59	08	01	68	18	00	4206	18	03	24	34		54		6	5
190	49	54	144	51	08	01	68	21	00	4206	18	15	23	34		55		8	5
191	50	03	144	55	09	01	68	06	00	4206	20	85	25	23		49		8	5
192	49	57	144	52	09	01	68	09	00	4206	20	27	24	33		56		8	7
193	49	59	144	52	09	01	68	12	00	4206	21	02	30	24		55		8	6
194	49	58	144	57	09	01	68	18	00	4206	21	27	21	34		46		9	5
195	49	57	144	52	09	01	68	21	00	4206	21	02	26	33		56		8	5
196	49	52	144	52	10	01	68	00	00	4206	20	15	28	35		57		8	6
197	49	59	145	00	10	01	68	09	00	4206	17	02	23	32		45		6	7
198	50	00	145	02	10	01	68	12	00	4206	15	02	26	22		45		6	8
199	50	02	144	52	10	01	68	15	00	4206	13	02	30	34		44		6	4
200	50	06	145	27	11	01	68	18	00	4206	01	15	17	34		56		8	5
201	50	04	145	08	11	01	68	21	00	4206	01	15	17	33		56		6	5

TABLE 1

CON No	LAT		LONG		DATE			GMT		DEPTH	BAR	WW	WIND	W-1		W-2		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min	Metres	Mbs	Code	Amt	P	H	P	H	T	A
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203	49	57	144	59	12	01	68	03	00	4206	00	15	15	33		65		6	7
204	50	00	145	00	12	01	68	06	00	4206	-99	85	08	22		35		8	7
205	49	57	144	58	12	01	68	09	00	4206	-97	02	09	22		XX		8	7
206	49	54	144	54	12	01	68	12	00	4206	-94	02	14	22		56		8	7
207	49	54	144	55	12	01	68	15	00	4206	-91	02	13	22		XX		6	7
208	50	00	144	59	12	01	68	18	00	4206	-88	02	20	22		55		6	5
209	49	55	145	00	12	01	68	21	00	4206	-87	26	19	22		55		8	5
210	49	58	144	58	13	01	68	00	00	4206	-85	02	19	22		44		8	6
211	49	59	144	56	13	01	68	03	00	4206	-85	02	19	22		64		3	5
212	50	00	145	00	13	01	68	06	00	4206	-85	02	21	32		44		8	5
213	49	56	144	58	13	01	68	09	00	4206	-86	85	07	21		44		6	5
214	49	59	144	57	13	01	68	12	00	4206	-86	26	07	21		44		6	5
215	49	55	144	59	13	01	68	15	00	4206	-87	02	13	31		54		8	6
216	49	59	145	00	13	01	68	18	00	4206	-88	80	22	22		59		6	8
217	49	59	145	00	14	01	68	06	00	4206	-90	71	06	42		55		7	8
218	49	56	145	02	14	01	68	09	00	4206	-91	02	18	43		67		6	8
219	49	58	144	58	14	01	68	12	00	4206	-91	71	19	43		56		7	8
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222	49	58	145	01	14	01	68	21	00	4206	-91	15	13	32		66		9	5
223	50	01	145	00	15	01	68	00	00	4206	-91	73	07	21		65		X	9
224	49	57	144	59	15	01	68	03	00	4206	-91	15	04	20		65		9	6
225	50	00	144	59	15	01	68	06	00	4206	-91	02	14	21		XX		6	7
226	49	52	145	00	15	01	68	09	00	4206	-91	02	13	21		55		6	6

TABLE 1

CON No	LAT Deg	LAT Min	LONG Deg	LONG Min	DATE Day	DATE Mon	DATE Yr	GMT Hrs	GMT Min	DEPTH Metres	BAR Mbs	WW Code	WIND Amt	W-1 P	W-1 H	W-2 P	W-2 H	CLOUD T	CLOUD A
227	49	58	144	59	15	01	68	12	00	4206	-91	02	30	21		45		6	5
228	49	55	144	56	15	01	68	15	00	4206	-91	02	16	21		XX		8	5
229	50	00	144	59	15	01	68	18	00	4206	-93	22	21	22		54		7	8
230	49	57	144	53	15	01	68	21	00	4206	-93	02	14	22		54		8	5
231	49	57	144	57	16	01	68	00	00	4206	-93	26	14	22		64		8	3
232	49	59	145	01	16	01	68	03	00	4206	-94	16	17	22		65		9	5
233	50	01	145	01	16	01	68	06	00	4206	-94	02	08	21		54		9	3
234	50	04	144	57	16	01	68	09	00	4206	-95	02	17	21		44		9	3
235	50	01	444	58	16	01	68	12	00	4206	-95	02	22	32		44		9	2
236	50	01	144	53	16	01	68	15	00	4206	-94	02	23	33		54		9	7
237	49	59	145	01	16	01	68	18	00	4206	-94	71	19	22		55		7	8
239	49	57	144	58	17	01	68	09	00	4206	-94	02	29	44		59		8	5
240	49	56	145	03	17	01	68	18	00	4206	-92	26	15	23		66		9	7
241	49	54	144	59	17	01	68	21	00	4206	-92	86	22	34		66		9	7
242	49	55	145	02	18	01	68	00	00	4206	-91	26	28	34		66		9	7
243	50	00	144	55	18	01	68	12	00	4206	-95	22	29	33		35		8	2
244	50	00	144	24	19	01	68	00	00	4206	-95	02	33	34		57		8	7
245	49	54	143	18	19	01	68	12	00	4206	06	02	18	32		45		6	5
246	49	49	142	38	19	01	68	18	00	4206	07	02	16	22		45		6	7
247	49	55	142	32	19	01	68	21	00	4206	07	02	18	22		45		2	8
248	49	51	142	27	20	01	68	00	00	4206	05	02	19	22		45		6	8
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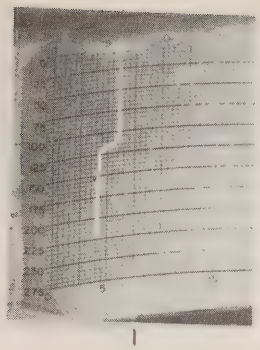
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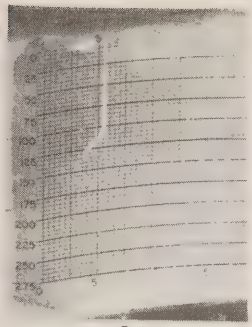
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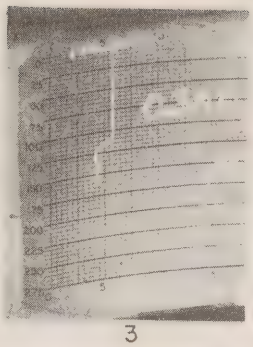
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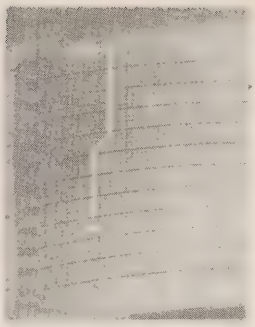
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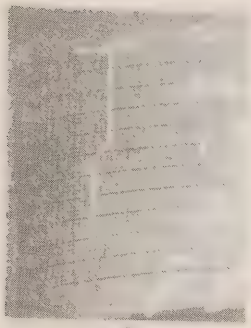
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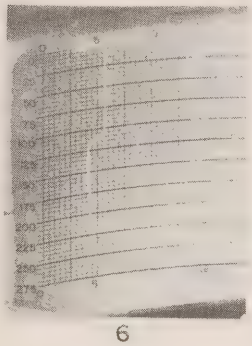
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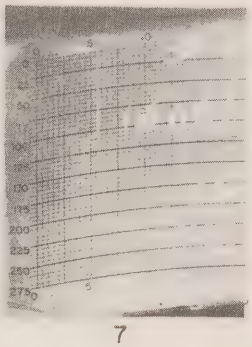
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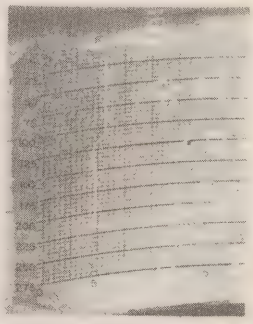
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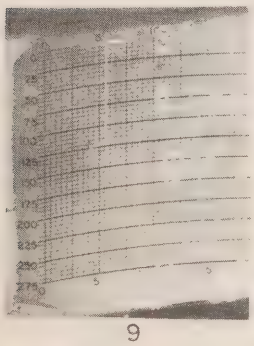
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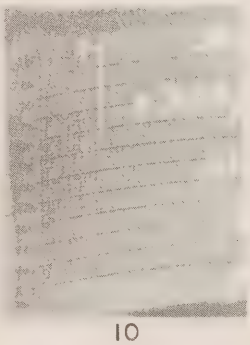
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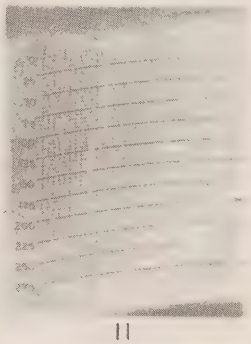
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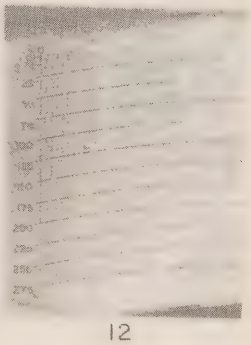
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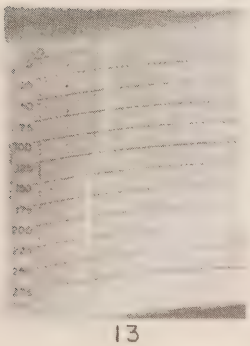
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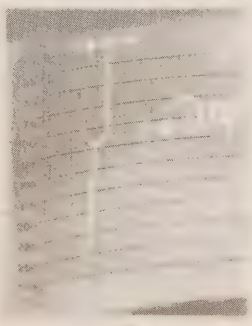
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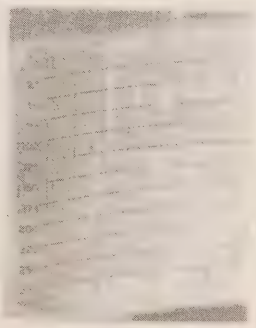
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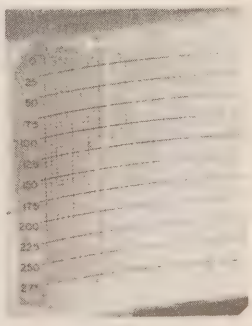
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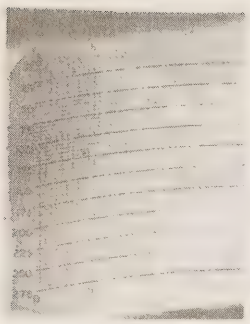
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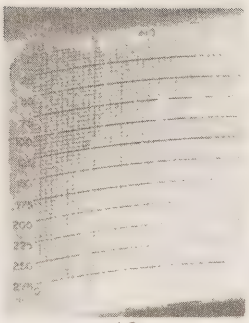
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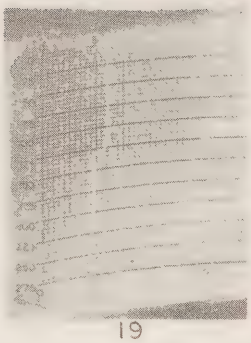
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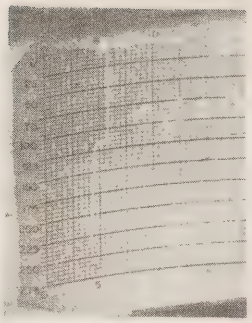
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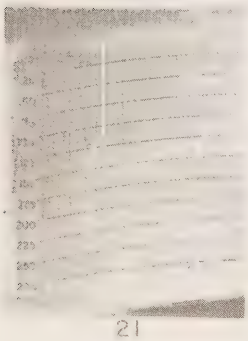
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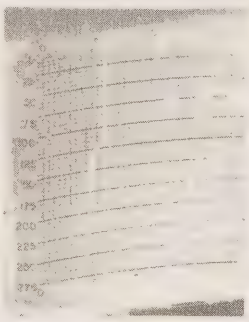
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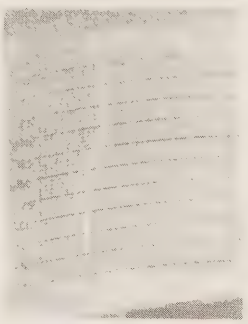
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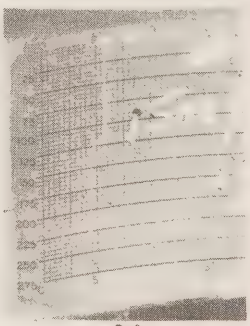
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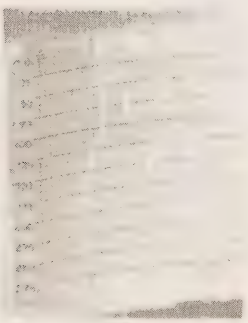
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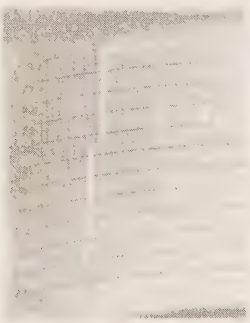
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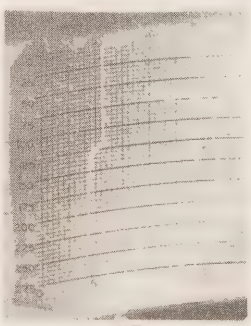
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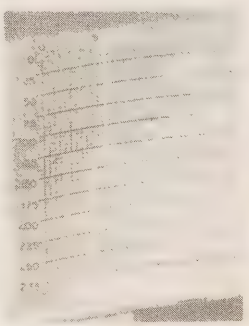
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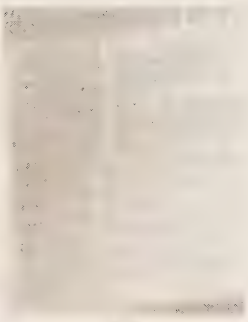
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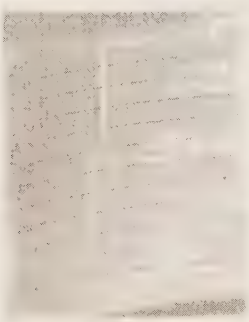
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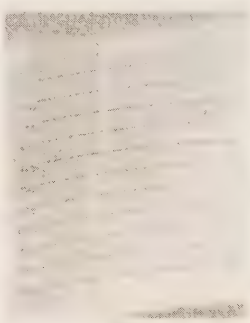
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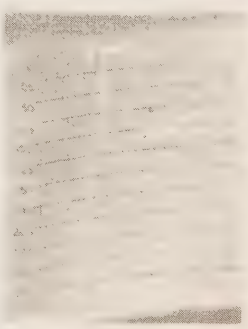
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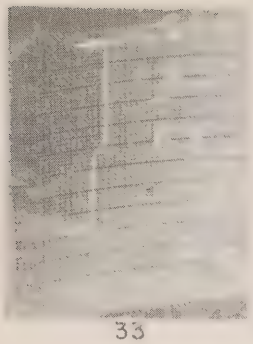
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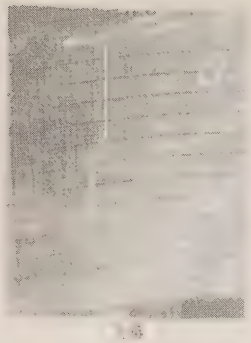
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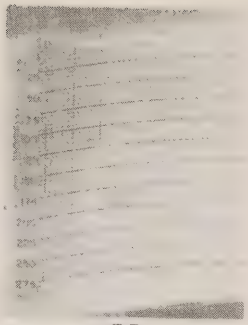
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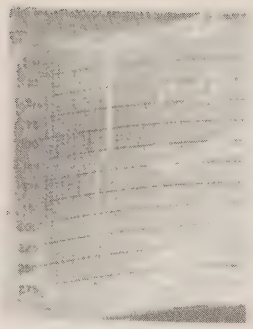
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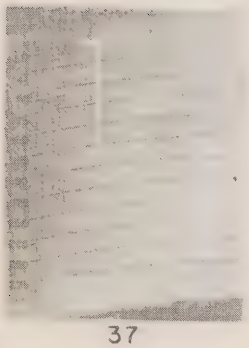
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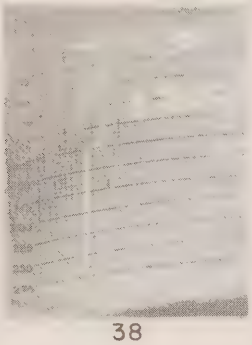
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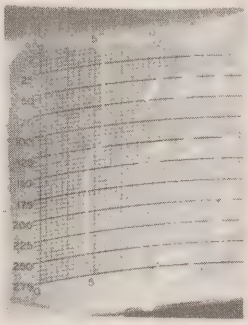
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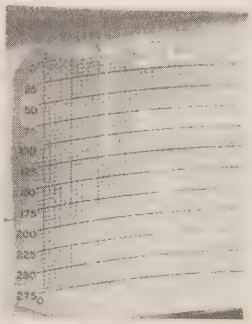
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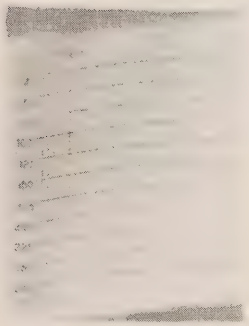
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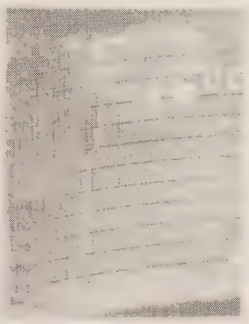
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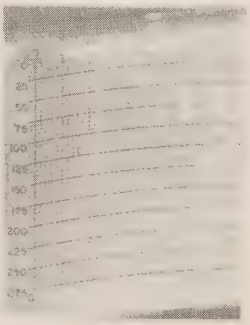
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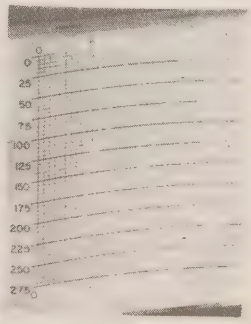
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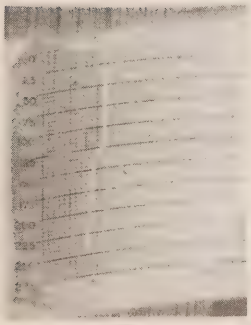
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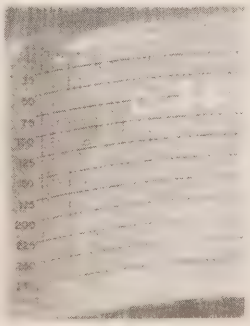
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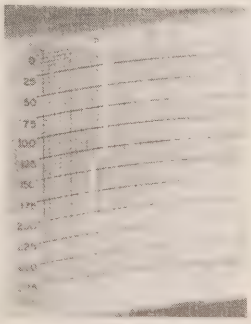
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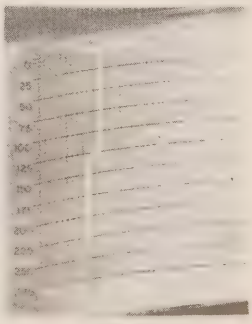
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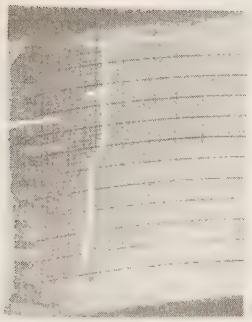
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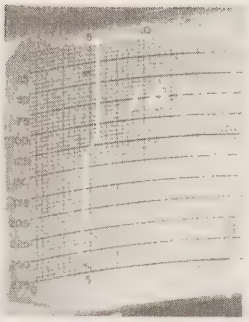
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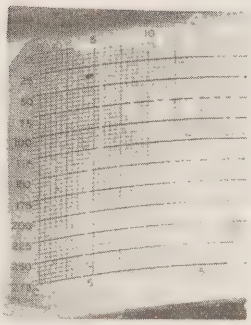
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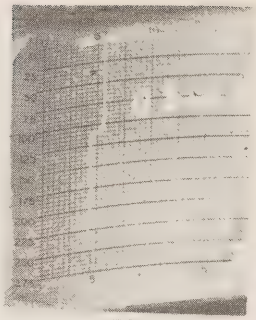
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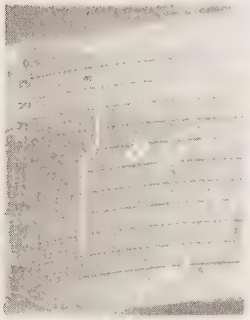
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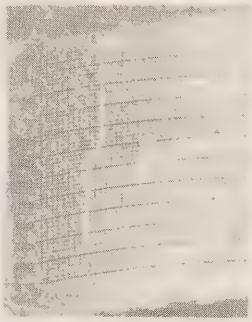
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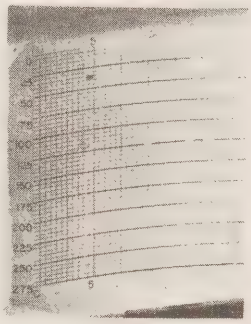
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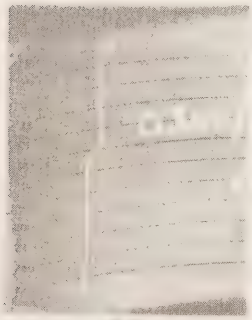
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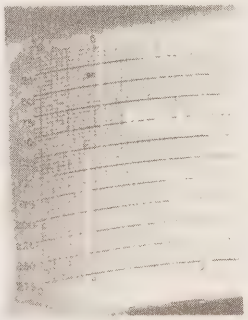
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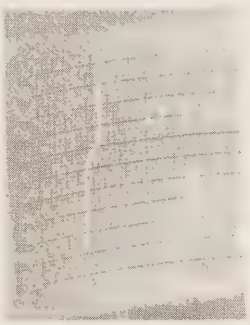
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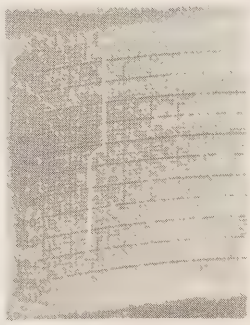
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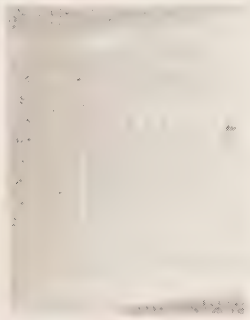

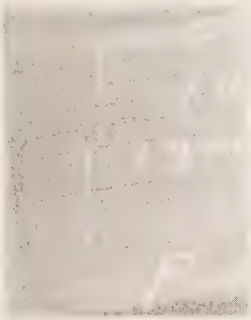
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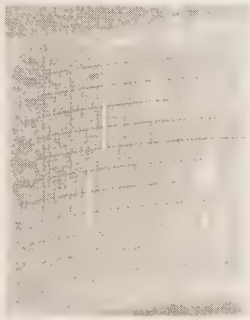
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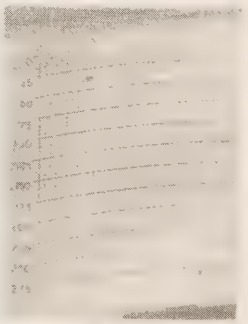
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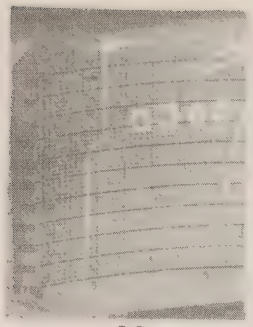
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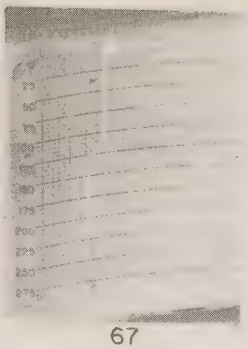
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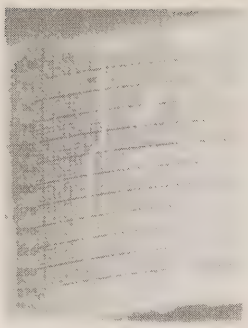
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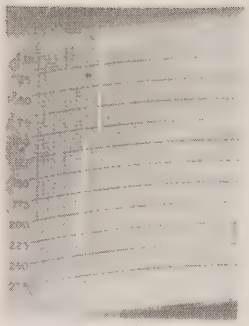
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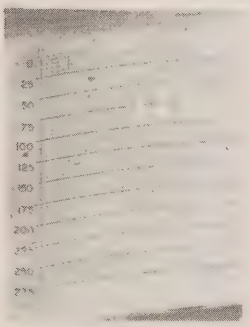
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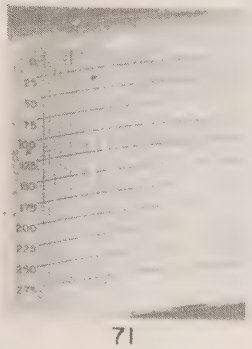
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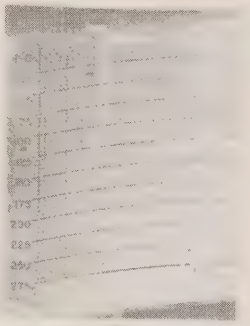
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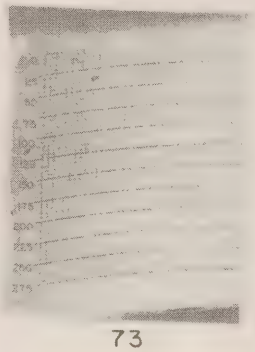
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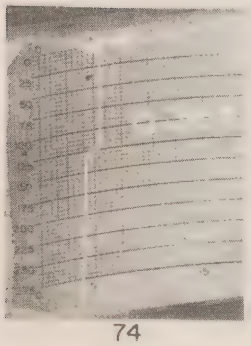
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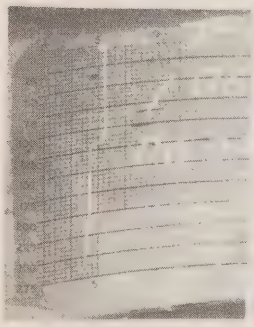
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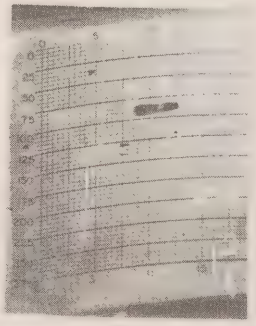
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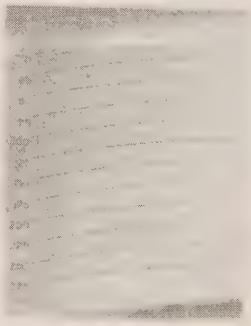
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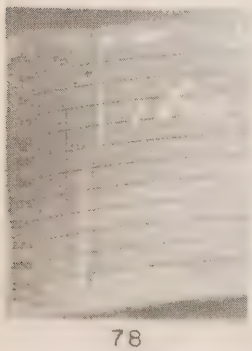
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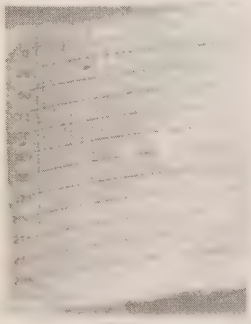
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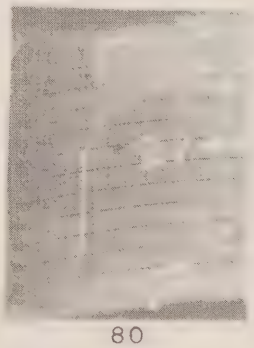
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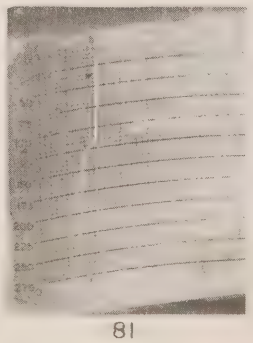
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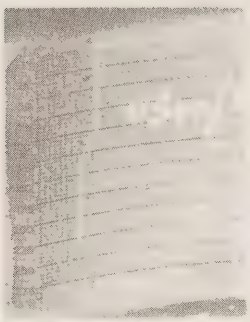
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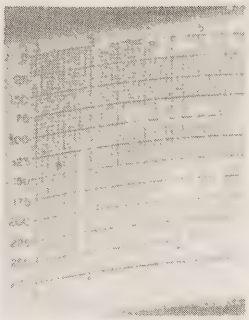
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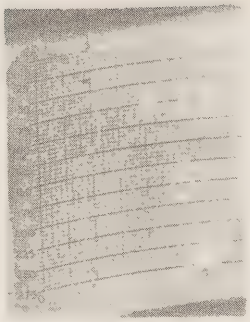
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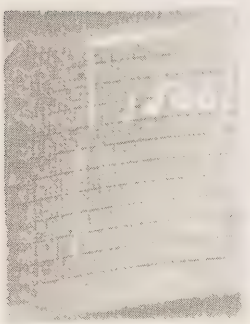
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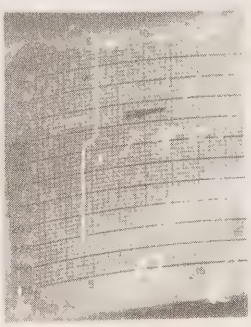
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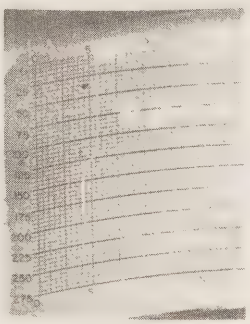
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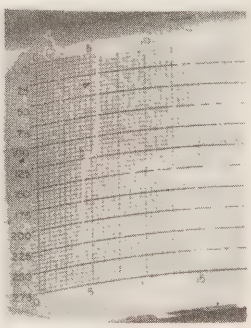
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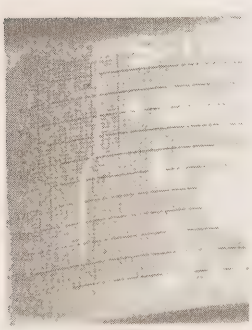
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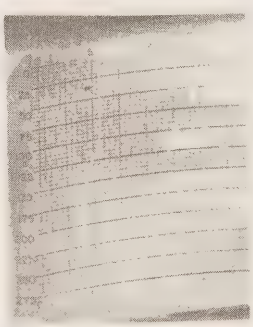
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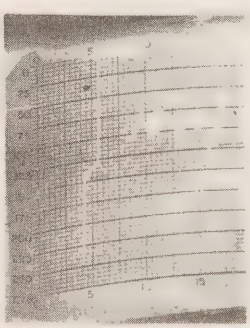
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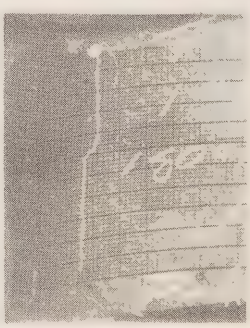
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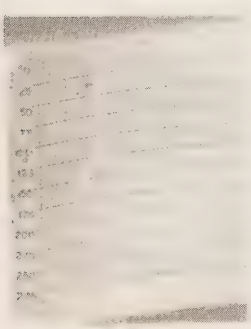
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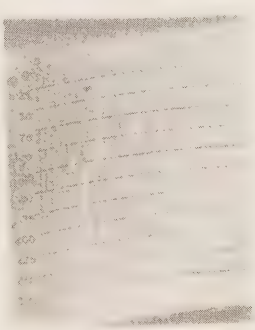
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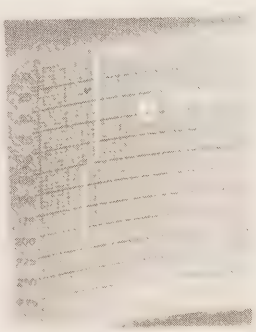
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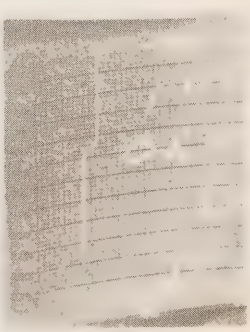
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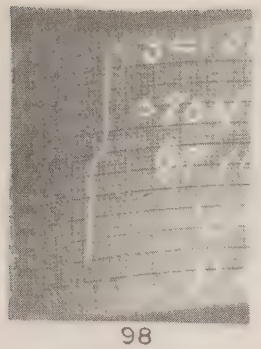
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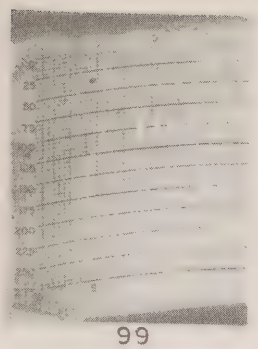
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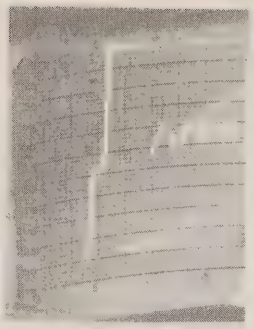
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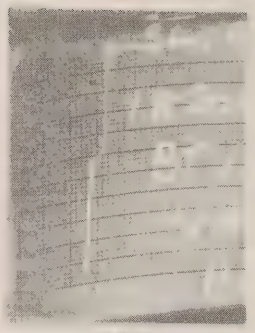
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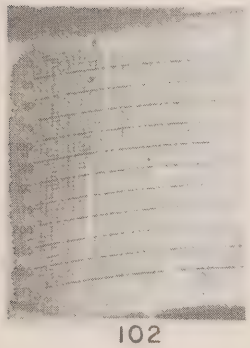
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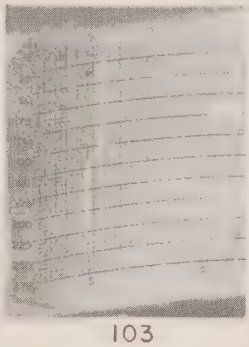
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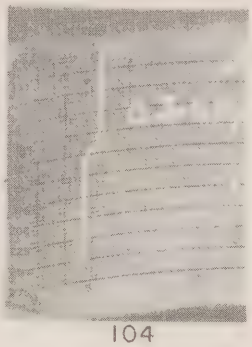
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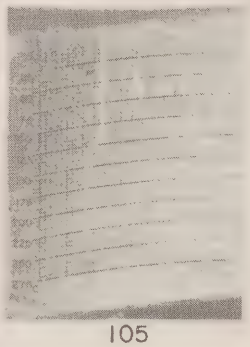
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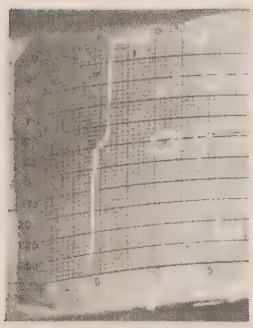
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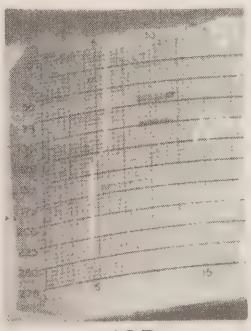
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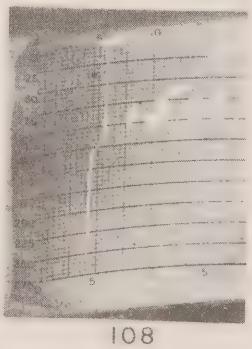
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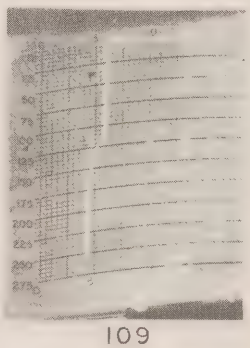
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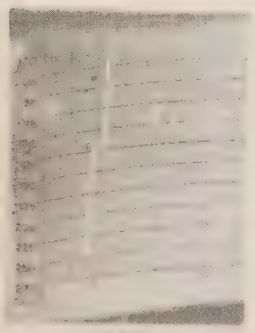
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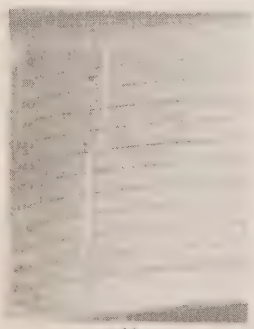
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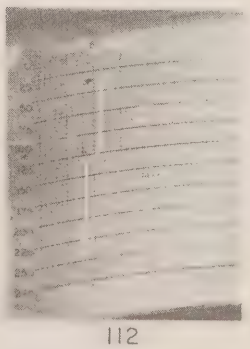
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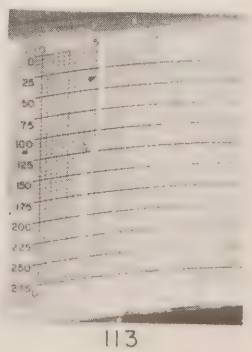
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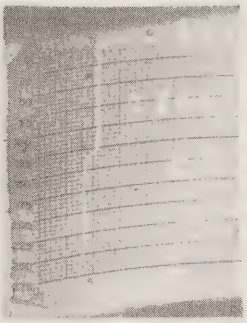
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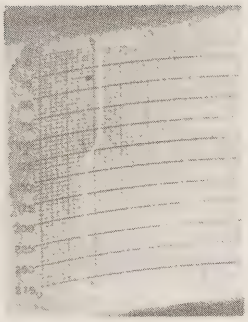
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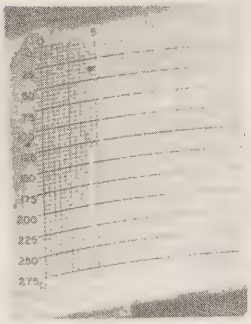
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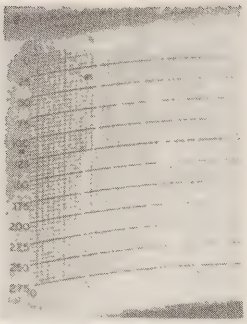
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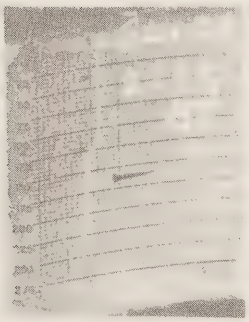
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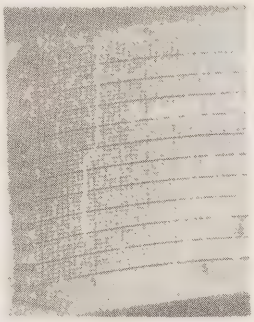
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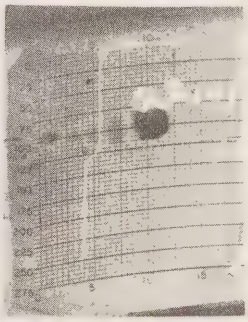
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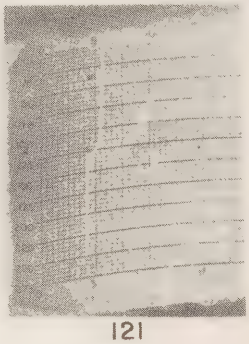
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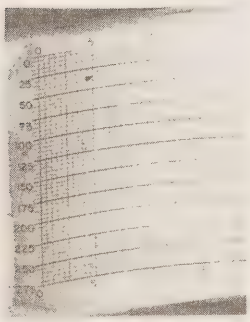
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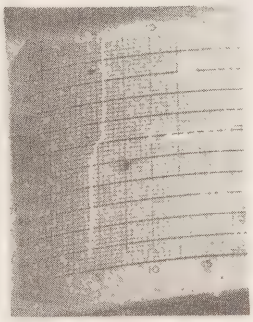
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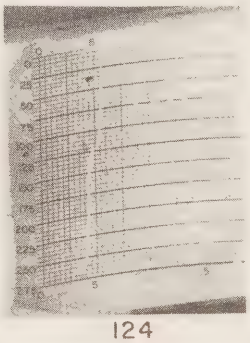
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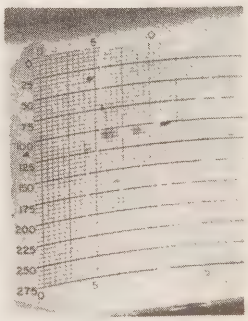
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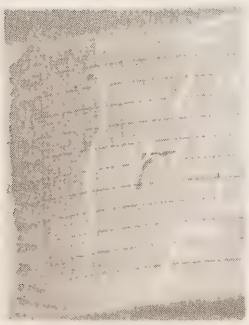
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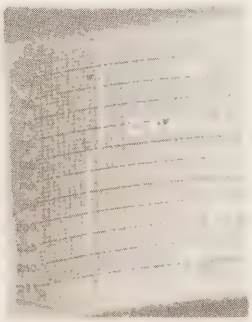
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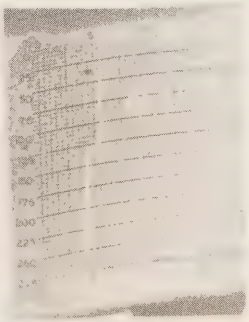
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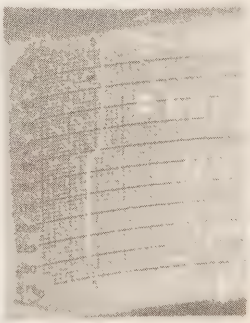
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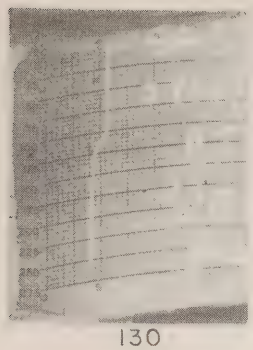
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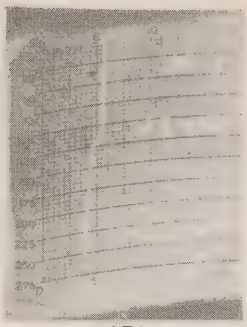
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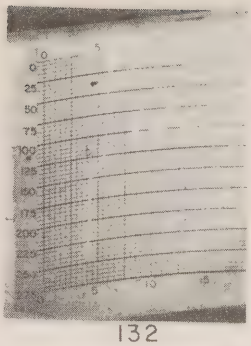
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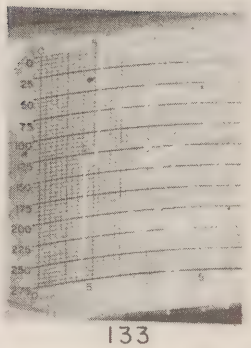
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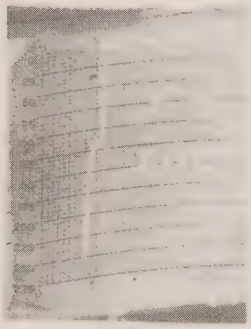
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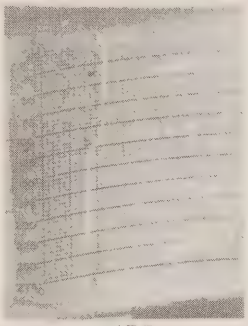
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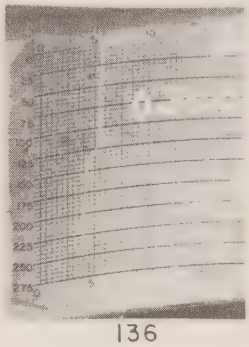
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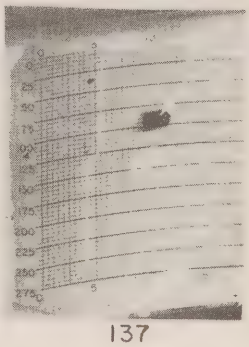
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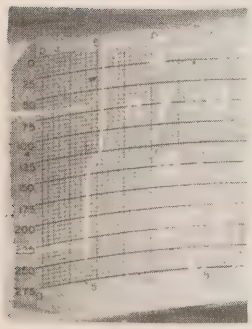
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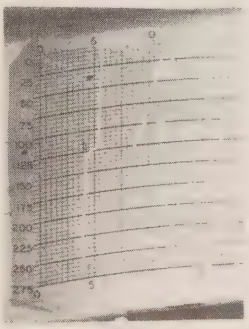
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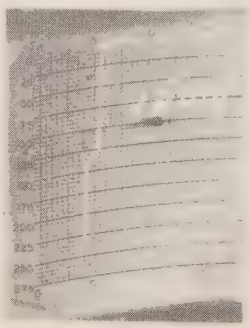
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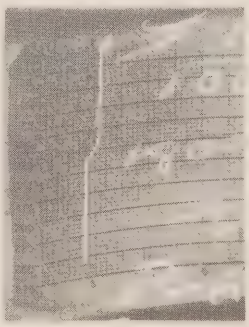
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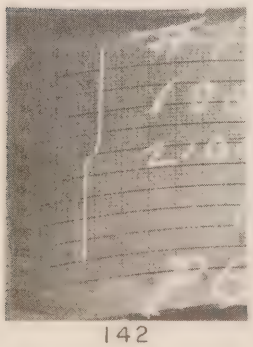
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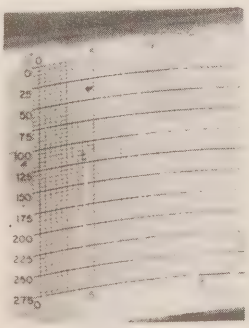
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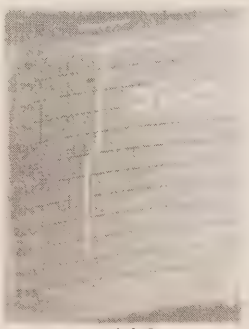
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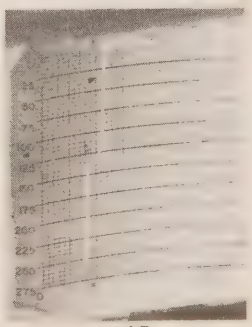
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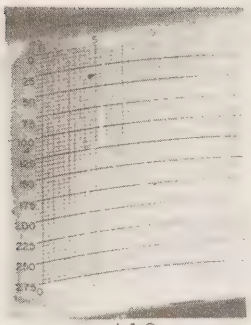
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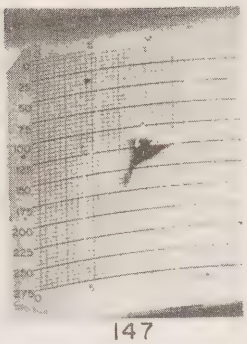
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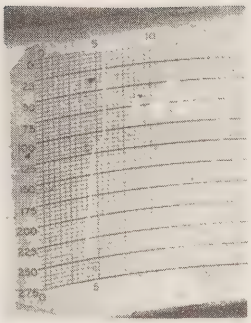
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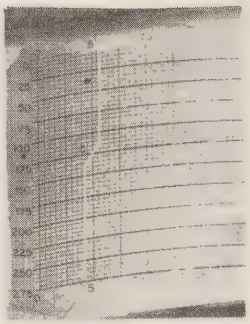
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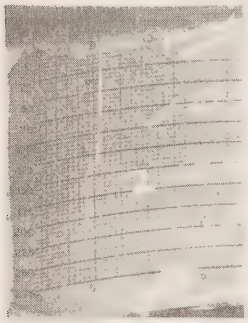
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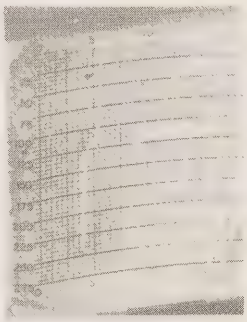
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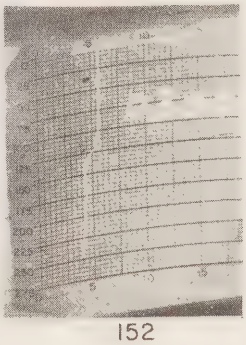
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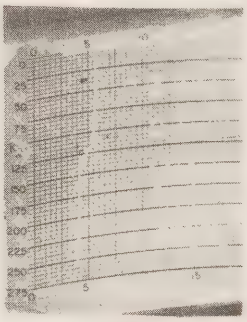
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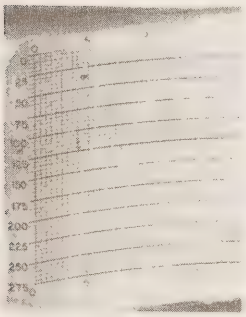
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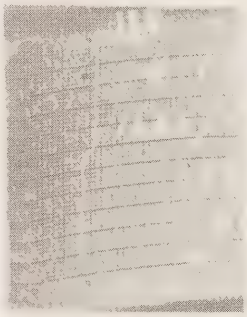
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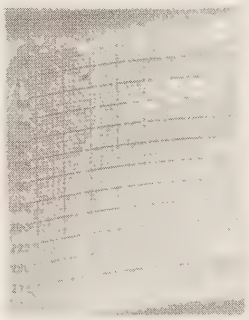
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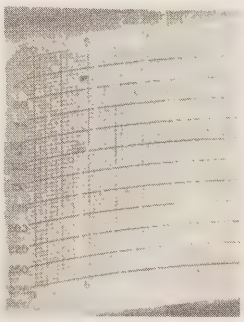
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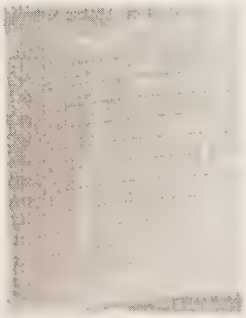
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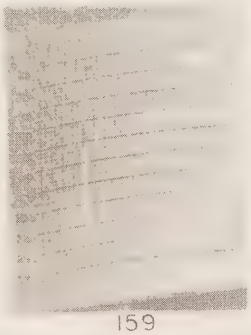
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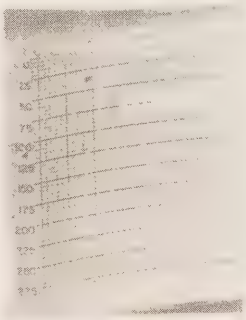
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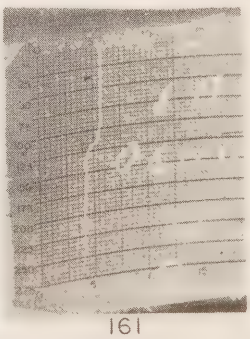
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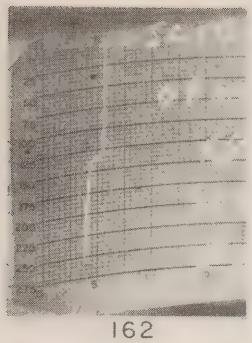
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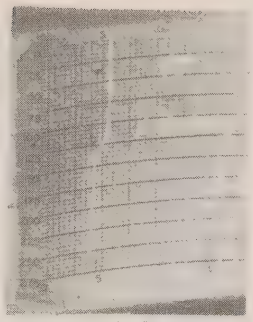
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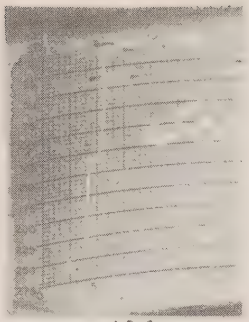
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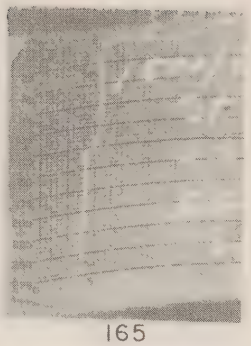
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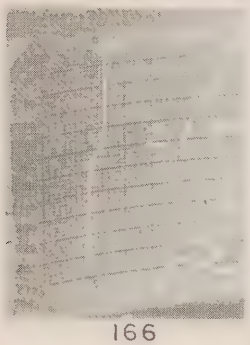
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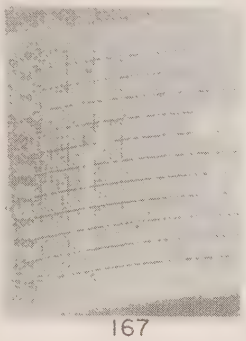
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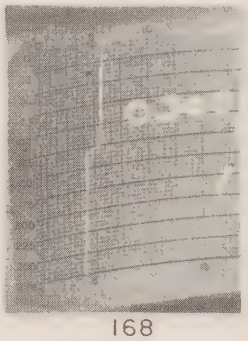
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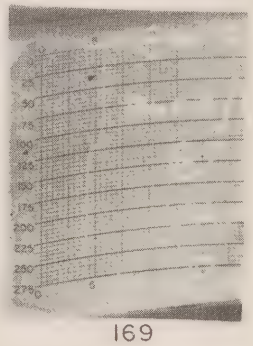
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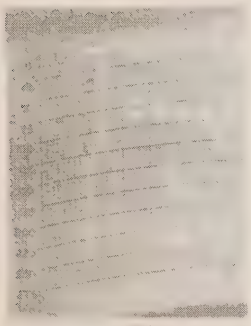
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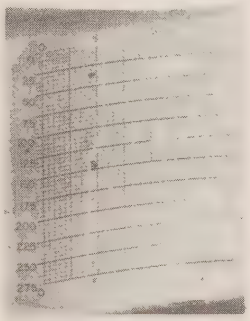
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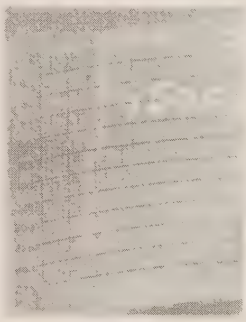
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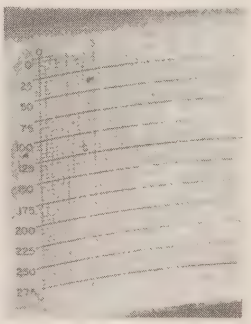
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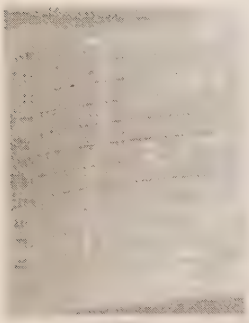
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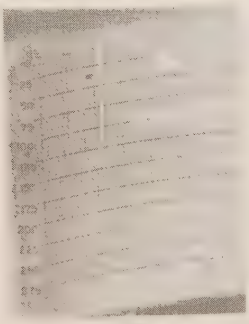
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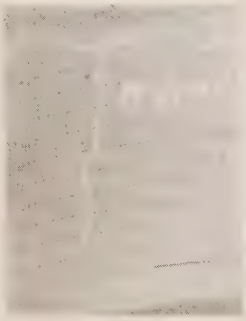
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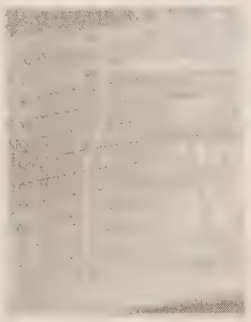
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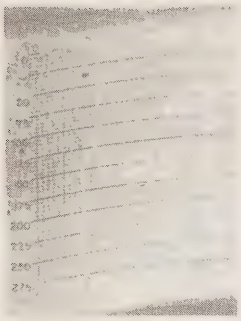
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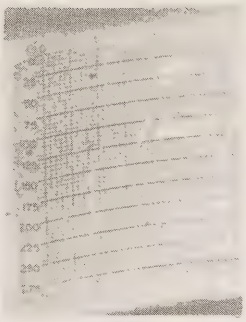
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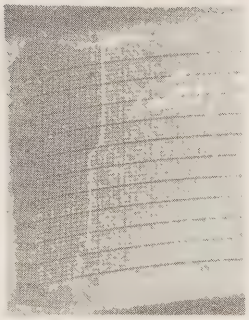
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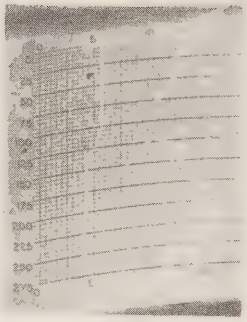
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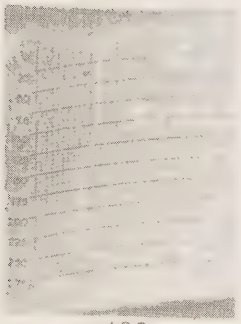
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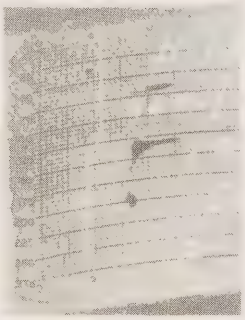
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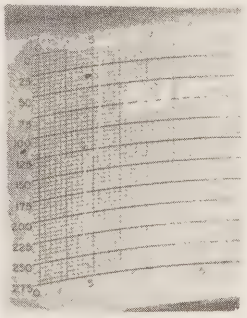
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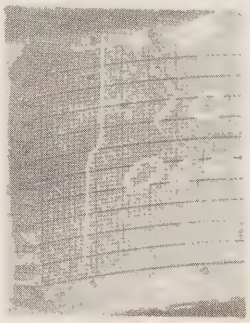
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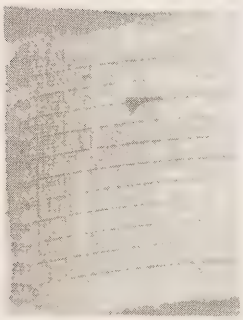
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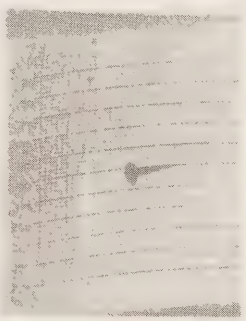
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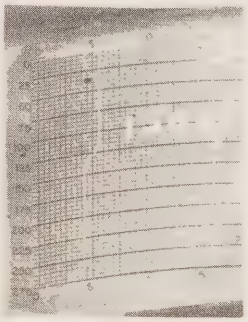
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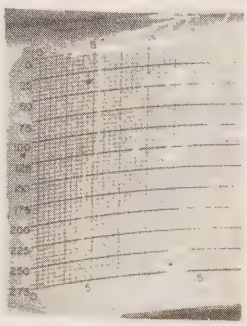
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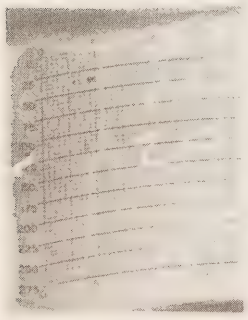
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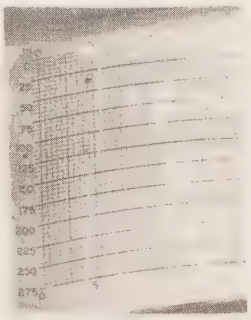
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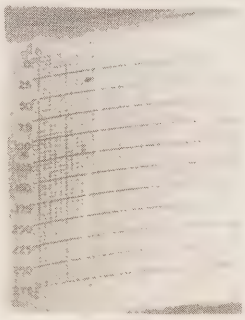
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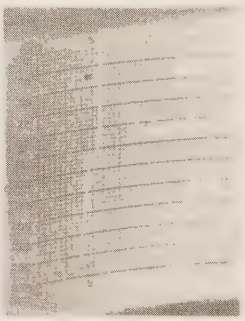
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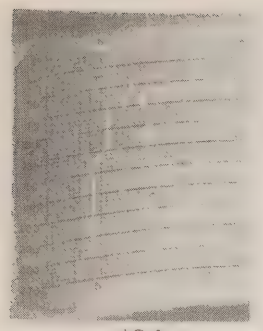
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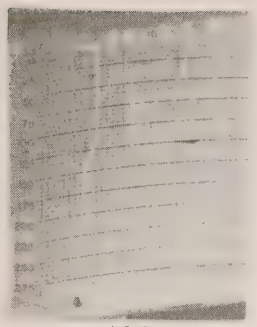
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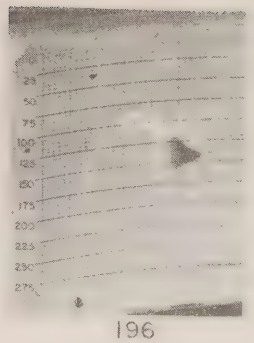
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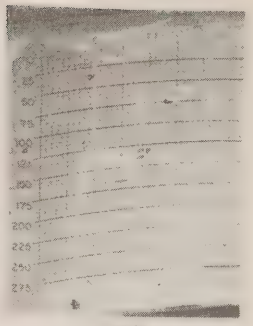
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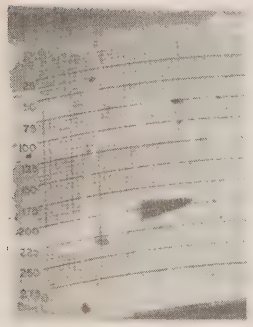
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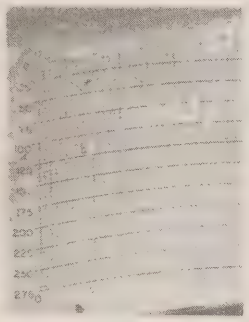
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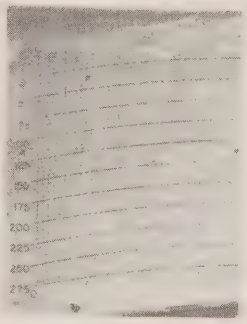
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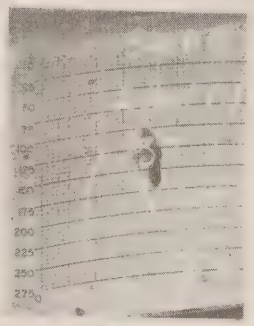
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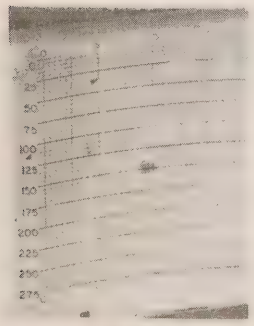
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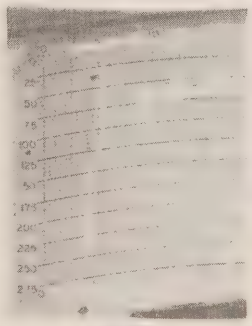
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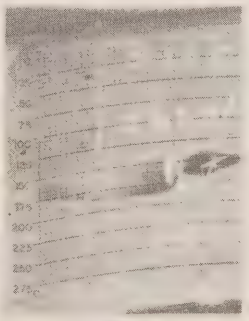
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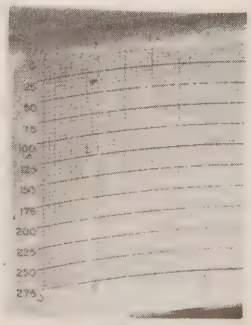
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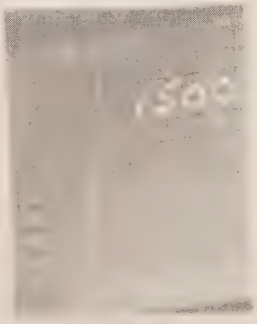
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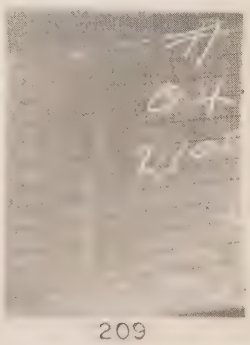
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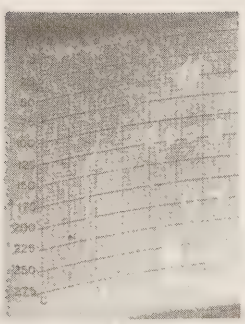
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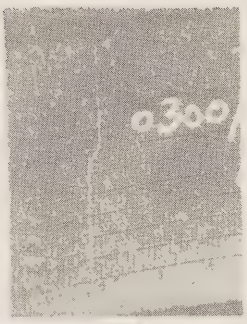
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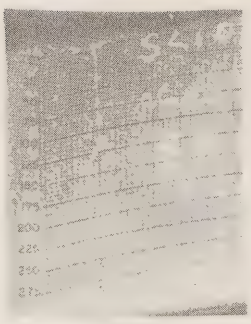
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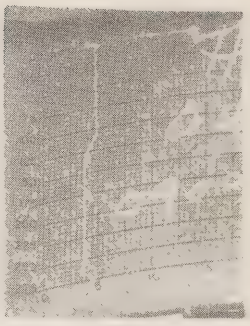
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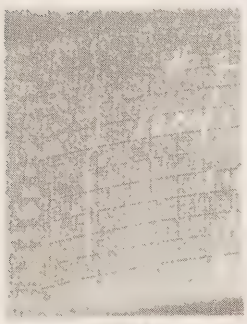
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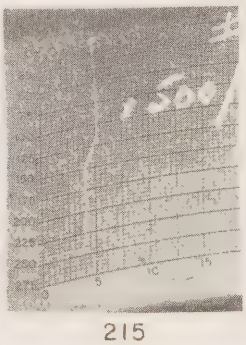
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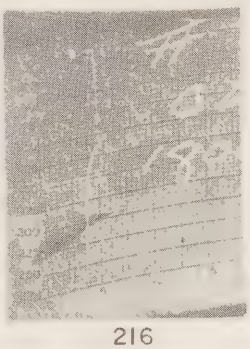
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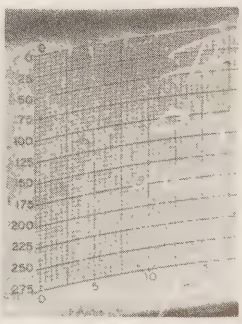
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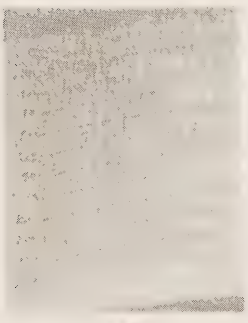
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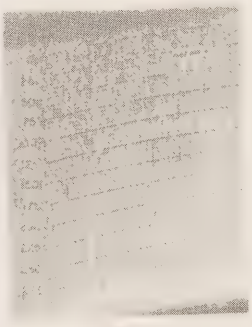
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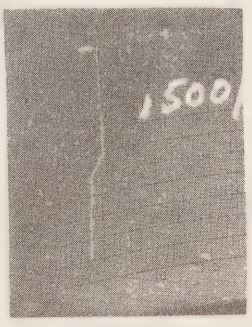
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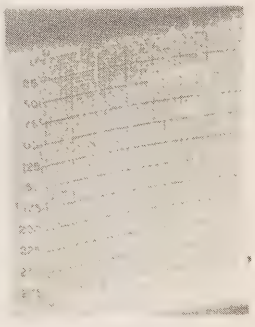
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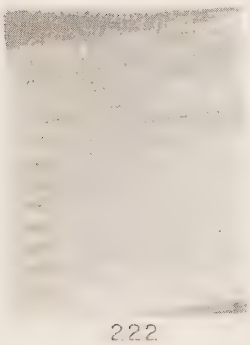
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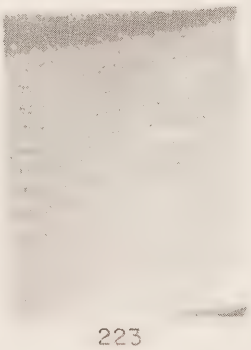
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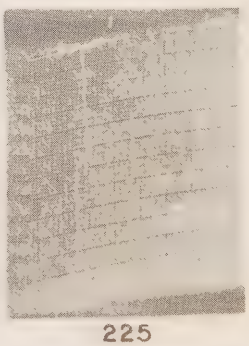
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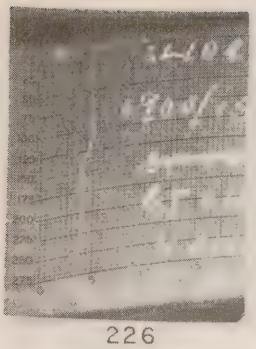
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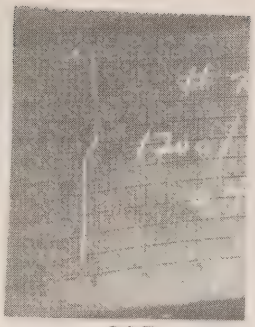
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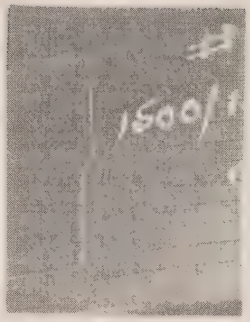
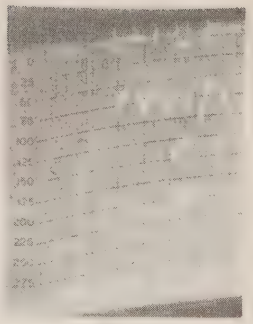
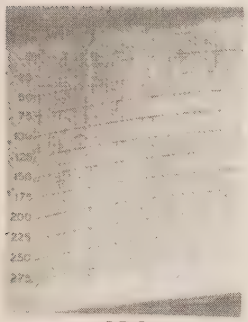
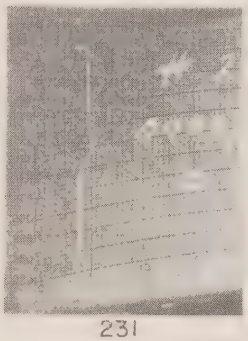

228


229


230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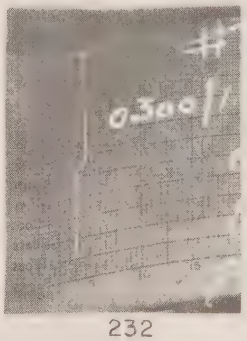
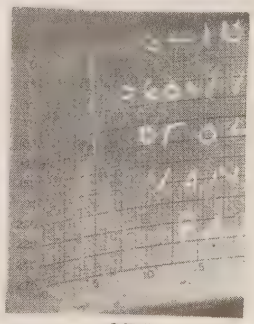

232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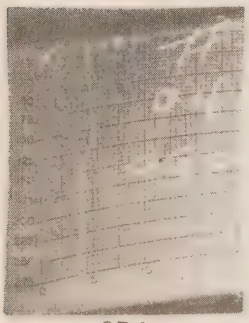
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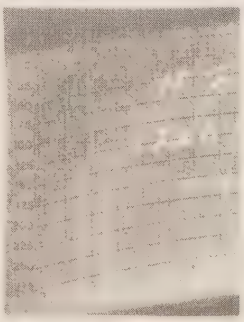
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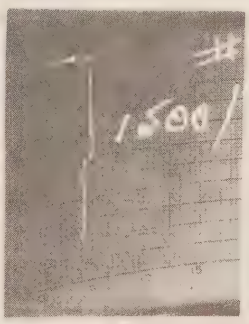
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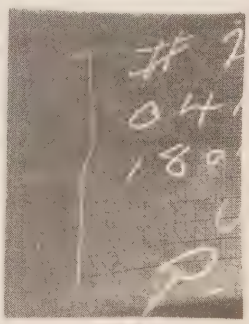
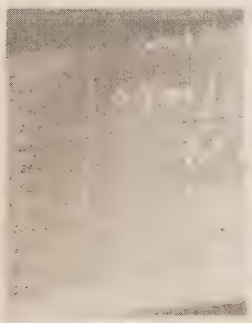

237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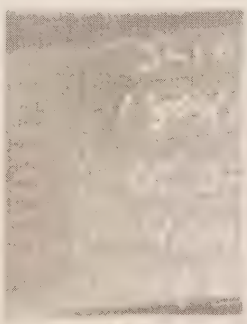
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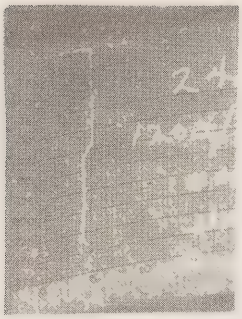
241


242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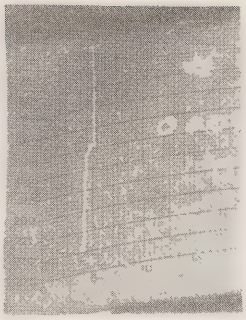
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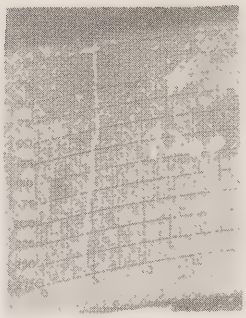
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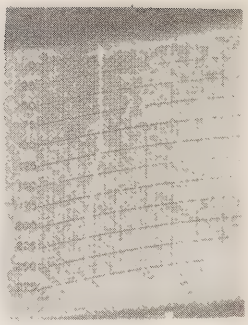
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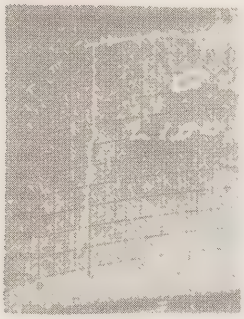
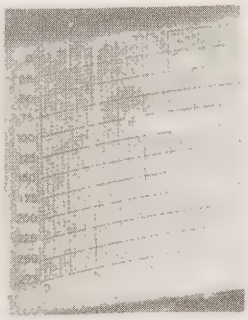

247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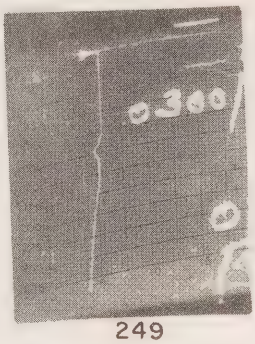
249

CCGS "QUADRA" 02-68-002

BATHYTHERMOGRAMS

TABLE 2

CON No	LAT		LONG		DATE			GMT		DEPTH	BAR	WW	WIND	W-1		W-2		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min	Metres	Mbs	Code	Amt	P	H	P	H	T	A
1	49	48	142	12	20	01	68	12	00	3950	02	02	10					5	8
2	49	55	142	50	20	01	68	15	00	3910	06	02	05					5	7,
3	49	56	143	40	20	01	68	18	40	4115	09	02	03			44		8	7
4	49	59	144	13	20	01	68	21	00	4221	12	02	08	42		44		6	6
5	50	03	144	49	21	01	68	00	00	4221	12	02	12	42		23		1	5
6	50	00	145	00	21	01	68	03	00	4221	13	02	14					4	6
7	50	00	145	08	21	01	68	06	00	4221	12	03	16					5	8
8	50	03	145	06	21	01	68	09	00	4221	09	61	35					5	8
9	49	46	145	10	22	01	68	15	00	4221	-91	02	18					6	8
10	49	55	145	08	22	01	68	18	00	4221	-92	10	21	56				5	8
11	49	49	145	09	22	01	68	21	00	4221	-93	61	15	32		32		0	8
12	50	00	145	03	23	01	68	00	00	4221	-95	61	18	32		34		0	8
13	50	08	144	46	23	01	68	03	00	4221	01	01	14	22		32		2	4
14	50	05	144	48	23	01	68	06	00	4221	05	02	20					2	4
15	49	56	145	03	23	01	68	09	00	4221	09	01	18					1	2
16	49	57	145	06	23	01	68	12	00	4221	10	25	31					9	3
17	49	50	145	11	23	01	68	15	00	4221	13	01	26					5	5
18	49	49	145	17	23	01	68	18	00	4221	17	26	19	54				9	4
19	49	59	145	03	23	01	68	21	00	4221	20	23	31	43				9	7
20	49	58	144	50	24	01	68	00	00	4221	24	02	29	46				9	5
21	50	28	145	53	24	01	68	18	00	4221	46	15	24	45				5	7
22	50	19	145	29	24	01	68	21	00	4221	47	02	28	45				5	8
23	50	13	145	20	25	01	68	00	00	4221	47	02	22	45				5	8
24	50	00	145	00	25	01	68	03	00	4221									
25	49	50	144	45	25	01	68	15	00	4221	47	02	19					5	3

TABLE 2

CON No	LAT Deg	LAT Min	LONG Deg	LONG Min	DATE Day	DATE Mon	DATE Yr	GMT Hrs	GMT Min	DEPTH Metres	BAR Mbs	WW Code	WIND Amt	W-1 P	W-1 H	W-2 P	W-2 H	CLOUD T	CLOUD A
26	50	04	144	45	25	01	68	18	00	4221	47	02	19	44				4	2
27	50	08	144	54	25	01	68	21	00	4221	47	02	17	43				1	2
28	49	58	144	51	26	01	68	00	00	4221	45	03	20	44				4	5
29	49	55	144	45	26	01	68	03	00	4221	45	02	21					5	8
30	50	04	144	46	26	01	68	06	00	4221	45	02	22					5	8
31	50	05	144	46	26	01	68	09	00	4221	44	80	21					2	8
32	50	00	144	47	26	01	68	12	00	4221	43	02	19					2	2
33	49	53	144	38	26	01	68	15	00	4221	42	02	23					2	4
34	50	03	144	56	26	01	68	18	00	4221	42	02	19	43				2	7
35	50	09	145	00	26	01	68	21	00	4221	42	02	21	43				2	8
36	50	04	144	43	27	01	68	00	00	4221	40	02	20	43				4	8
37	50	00	144	48	27	01	68	03	00	4221	39	02	20					5	8
38	50	01	144	50	27	01	68	06	00	4221	38	02	22					5	8
39	50	01	144	51	27	01	68	09	00	4221	37	01	17					5	6
40	50	03	144	48	27	01	68	12	00	4221	36	02	26					6	8
41	50	03	144	38	27	01	68	15	00	4221	32	51	28					7	8
42	50	00	144	40	27	01	68	18	00	4221	31	20	26	45				7	8
43	50	08	144	43	27	01	68	21	00	4221	30	02	30	45				5	8
44	50	06	145	02	28	01	68	00	00	4221	28	02	34	44				5	8
45	49	58	145	15	29	01	68	00	00	4221	24	15	36	45				2	6
46	50	13	145	06	29	01	68	06	00	4221	28	02	23	34				1	2
47	50	04	144	56	29	01	68	09	00	4221	28	02	23					1	2
48	49	55	145	02	29	01	68	12	00	4221	28	02	19					1	4
49	50	03	145	05	29	01	68	15	00	4221	28	02	22					4	2
50	50	06	145	00	29	01	68	18	00	4221	27	03	20	32				5	6

TABLE 2

CON No	LAT		LONG		DATE			GMT		DEPTH	BAR	WW	WIND	W-1		W-2		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min	Metres	Mbs	Code	Amt	P	H	P	H	T	A
51	50	03	144	58	29	01	68	21	00	4221	25	02	13	32				5	6
52	49	57	144	48	30	01	68	00	00	4221	22	02	20	32				0	8
53	49	57	144	48	30	01	68	03	00	4221	17	02	26					5	3
54	50	33	145	02	30	01	68	06	00	4221	15	02	28					5	8
55	50	00	145	09	31	01	68	00	00	4221	08	02	17	42				5	7
56	49	50	144	52	31	01	68	03	00	4221	07	02	22					5	8
57	49	52	144	58	31	01	68	06	00	4221	06	02	19					5	8
58	50	03	145	10	31	01	68	09	00	4221	05	02	19					5	8
59	50	07	145	07	31	01	68	12	00	4221	04	03	23					5	8
60	50	09	145	13	31	01	68	15	00	4221	02	02	28					6	6
61	50	00	145	20	31	01	68	18	00	4221	02	02	31	42				5	6
62	50	05	144	53	31	01	68	21	00	4221	02	02	23	42				5	6
63	50	02	144	40	01	02	68	00	00	4221	01	02	27	44				5	4
64	50	08	144	53	01	02	68	03	00	4221	03	02	26	44				5	7
65	50	16	145	00	01	02	68	06	00	4221	05	02	10					5	5
66	50	04	144	59	01	02	68	09	00	4221	06	02	08					5	7
67	49	58	144	58	01	02	68	15	00	4221	03	02	08					5	8
68	50	05	144	52	01	02	68	18	00	4221	02	02	16			34		5	8
69	50	07	144	52	01	02	68	21	30	4221	01	02	13			34		7	8
70	50	03	144	48	02	02	68	00	00	4221	-98	61	16	43		93		7	5
71	49	55	144	52	02	02	68	03	00	4221	-96	61	20	42				7	6
72	49	55	144	52	02	02	68	06	00	4221	-96	61	19					0	8
73	49	52	144	56	02	02	68	09	00	4221	-95	61	18					0	8
74	49	52	144	54	02	02	68	12	00	4221	-94	21	19					0	8
75	49	52	145	04	02	02	68	15	00	4221	-92	61	25					7	3

TABLE 2

CON No	LAT		LONG		DATE			GMT		DEPTH	BAR	WW	WIND	W-1		W-2		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min	Metres	Mbs	Code	Amt	P	H	P	H	T	A
76	49	47	145	01	02	02	68	18	00	4221	-88	61	35	44		04		7	5
77	49	50	144	48	05	02	68	00	00	4221	12	02	20	34				5	8
78	50	03	144	58	05	02	68	03	00	4221	11	02	20	33		84		5	6
79	49	58	144	52	05	02	68	06	00	4221	10	02	27					5	8
80	50	06	144	55	05	02	68	09	00	4221	07	02	27					6	8
81	49	50	145	05	08	02	68	12	00	4221	-91	10	27					6	8
82	49	55	145	06	08	02	68	15	00	4221	-91	47	25					1	9
83	49	48	145	12	08	02	68	18	00	4221	-93	28	15					7	8
84	49	51	145	19	08	02	68	21	00	4221	-96	02	18	33				5	6
85	49	50	145	25	09	02	68	00	00	4221	-97	02	19	33		03		6	8
86	49	50	145	24	09	02	68	03	00	4221	-99	10	19	33		03		6	7
87	49	58	145	26	09	02	68	06	00	4221	00	44	10					0	0
88	50	00	145	15	09	02	68	09	00	4221	-99	44	18					0	0
89	50	03	145	01	09	02	68	12	00	4221	-98	45	17					1	9
90	50	00	145	00	09	02	68	15	00	4221	-96	45	16					1	9
91	49	58	145	05	09	02	68	18	00	4221	-97	10	25	32		92		6	8
92	50	02	145	10	09	02	68	21	00	4221	-99	45	21	33				1	9
93	49	55	145	07	10	02	68	00	00	4221	-99	45	19	33		93		1	9
94	49	58	145	06	10	02	68	03	00	4221	01	01	16	20				5	7
95	49	55	145	02	10	02	68	06	00	4221	02	02	18					5	7
96	49	58	144	58	10	02	68	09	00	4221	03	02	21					5	3
97	50	03	144	56	10	02	68	12	00	4221	05	01	16					5	3
98	50	05	144	55	10	02	68	15	00	4221	07	02	12					5	3
99	50	02	145	00	10	02	68	18	00	4221	09	03	10	20				7	4
100	50	00	145	00	10	02	68	21	00	4221	09	03	00			82		2	6

TABLE 2

CON No	LAT		LONG		DATE			GMT		DEPTH	BAR	WW	WIND	W-1		W-2		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min	Metres	Mbs	Code	Amt	P	H	P	H	T	A
101	50	05	144	57	11	02	68	00	00	4221	09	16	00			82		2	6
102	50	05	144	56	11	02	68	03	00	4221	09	02	00			72		5	8
103	50	06	144	54	11	02	68	06	00	4221	09	10	00					5	8
104	50	09	144	54	11	02	68	09	00	4221	09	10	03					5	3
105	50	00	145	00	11	02	68	12	00	4221	09	47	06					1	9
106	49	55	145	02	11	02	68	15	00	4221	10	10	08					5	4
107	49	55	145	05	11	02	68	18	00	4221	11	03	10					8	7
108	50	01	145	03	11	02	68	21	00	4221	12	02	16	42				4	7
109	49	57	145	00	12	02	68	00	00	4221	12	02	17					5	7
110	49	54	145	07	12	02	68	03	00	4221	11	47	20	32		93		1	9
111	49	59	145	07	12	02	68	06	00	4221	10	45	25					1	9
112	50	02	144	58	12	02	68	09	00	4221	09	10	30					5	3
113	50	05	144	55	12	02	68	12	00	4221	08	02	28					0	0
114	50	10	144	55	12	02	68	15	00	4221	07	02	22	34				5	2
115	50	02	144	47	12	02	68	18	00	4221	07	02	24	34		84		5	6
116	50	09	144	45	12	02	68	21	00	4221	08	02	24					6	8
117	50	03	144	58	13	02	68	00	00	4221	07	61	22	33		06		0	8
118	50	01	144	59	13	02	68	03	00	4221	07	61	21	44		04		0	8
119	49	58	144	44	13	02	68	06	00	4221	08	61	15					0	8
120	50	00	145	00	13	02	68	09	00	4221	09	51	10					0	8
121	49	57	145	03	13	02	68	12	00	4221	11	10	12					6	3
122	50	06	145	05	13	02	68	15	00	4221	12	10	10					6	4
123	49	56	145	11	13	02	68	18	00	4221	15	10	11	34				6	8
124	49	56	145	20	13	02	68	21	00	4221	17	28	15	44		05		6	8
125	49	55	145	10	14	02	68	00	00	4221	17	02	15	33		06		5	8

TABLE 2

CON No	LAT Deg	LAT Min	LONG Deg	LONG Min	DATE Day	DATE Mon	DATE Yr	GMT Hrs	GMT Min	DEPTH Metres	BAR Mbs	WW Code	WIND Amt	W-1 P	W-1 H	W-2 P	W-2 H	CLOUD T	CLOUD A
126	49	55	145	04	14	02	68	03	00	4221	18	02	11	33		06		5	3
127	49	58	145	04	14	02	68	06	00	4221	19	02	10					5	8
128	49	59	145	02	14	02	68	09	00	4221	19	02	12					5	8
129	50	07	144	56	14	02	68	12	00	4221	19	51	13					6	8
130	50	05	145	02	14	02	68	15	00	4221	18	02	16					5	8
131	50	03	144	56	14	02	68	18	00	4221	17	02	13	32				5	7
132	49	55	145	04	14	02	68	21	00	4221	17	02	06	21		04		5	7
133	49	59	145	06	15	02	68	00	00	4221	16	10	07	21		03		5	2
134	49	59	145	06	15	02	68	03	00	4221	15	42	12	21		03		0	0
135	50	01	145	03	15	02	68	06	00	4221	14	28	16					6	8
136	50	05	145	00	15	02	68	09	00	4221	14	02	15					6	8
137	50	00	145	05	15	02	68	12	00	4221	14	02	08					5	8
138	50	00	145	08	15	02	68	15	00	4221	14	02	12					6	8
139	50	03	145	03	15	02	68	18	00	4221	12	02	14	23				5	3
140	49	56	145	06	15	02	68	21	00	4221	12	02	20	33				5	8
141	50	00	145	05	16	02	68	00	00	4221	10	01	20	34				5	6
142	49	56	145	10	16	02	68	03	00	4221	09	02	24	34				5	4
143	49	58	145	05	16	02	68	06	00	4221	08	02	30					5	8
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146	49	58	145	12	16	02	68	15	00	4221	01	02	35					6	8
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148	49	58	145	07	17	02	68	06	00	4221	-94	10	20					0	8
149	50	01	144	49	17	02	68	09	00	4221	-92	45	12					1	9
150	50	08	144	49	17	02	68	12	00	4221	-91	45	11					1	9

TABLE 2

CON No	LAT		LONG		DATE			GMT		DEPTH	BAR	WW	WIND	W-1		W-2		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min	Metres	Mbs	Code	Amt	P	H	P	H	T	A
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152	50	03	144	48	17	02	68	18	00	4221	-91	45	16	21	03			1	9
153	50	02	144	50	17	02	68	21	00	4221	-91	45	16	21	02			1	9
154	49	52	144	53	18	02	68	00	00	4221	-89	28	14	21	82			5	8
155	49	52	144	59	18	02	68	03	00	4221	-88	10	14	21	82			6	8
156	49	55	144	56	18	02	68	06	00	4221	-87	51	12	22	82			6	8
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159	49	56	145	07	18	02	68	15	00	4221	-83	51	10					6	8
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161	50	03	144	55	18	02	68	21	00	4221	-83	40	06	21	92			5	1
162	50	05	144	55	19	02	68	00	00	4221	-82	44	04	21	92			0	0
163	50	08	144	56	19	02	68	03	00	4221	-82	45	05	21	92			1	9
164	50	02	144	58	19	02	68	06	00	4221	-83	44	07					1	9
165	50	03	144	58	19	02	68	09	00	4221	-82	44	05					1	9
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172	50	02	144	54	20	02	68	06	00	4221	-88	45	11					1	9
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174	50	07	144	51	20	02	68	12	00	4221	-83	10	18					6	6
175	50	07	144	57	20	02	68	15	00	4221	-77	61	27					7	8

TABLE 2

CON No	LAT		LONG		DATE			GMT		DEPTH	BAR	WW	WIND	W-1		W-2		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min	Metres	Mbs	Code	Amt	P	H	P	H	T	A
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178	50	06	145	02	21	02	68	03	00	4221	-70	61	27					6	8
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184	50	05	144	54	22	02	68	00	00	4221	-86	01	20	23		74		5	4
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199	49	56	145	12	23	02	68	21	00	4221	-93	02	17	21		03		6	8
200	49	57	145	13	24	02	68	00	00	4221	-93	01	12	21		02		5	7

TABLE 2

CON No	LAT		LONG		DATE			GMT		DEPTH	BAR	WW	WIND	W–1		W–2		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min	Metres	Mbs	Code	Amt	P	H	P	H	T	A
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202	49	59	145	15	24	02	68	06	00	4221	-94	44	08					0	0
203	50	00	145	01	24	02	68	09	00	4221	-95	44	08					0	0
204	50	02	145	07	24	02	68	12	00	4221	-95	44	10					0	0
205	50	02	145	07	24	02	68	15	00	4221	-94	44	14	21		02		0	0
206	50	03	145	00	24	02	68	18	00	4221	-93	02	17	21		02		5	6
207	50	06	145	05	24	02	68	21	00	4221	-92	45	20	21		02		1	9
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212	50	03	145	05	25	02	68	12	00	4221	-87	44	10					0	0
213	50	02	145	04	25	02	68	15	00	4221	-87	10	18					6	8
214	50	06	144	58	25	02	68	18	00	4221	-85	61	23	21		02		0	8
215	49	55	144	57	25	02	68	21	00	4221	-87	44	20	22		52		0	8
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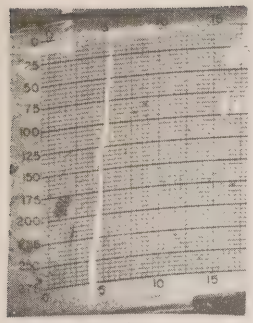
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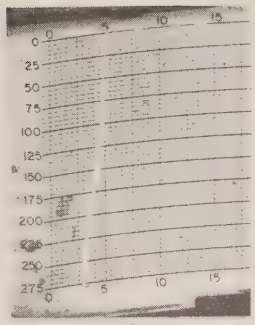
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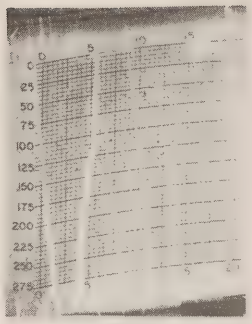
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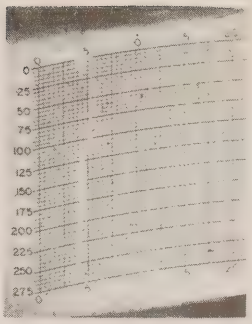
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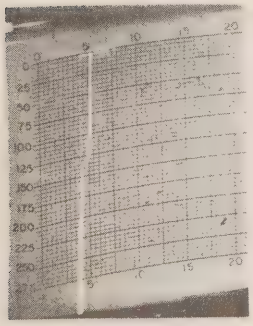
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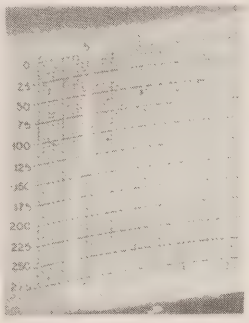
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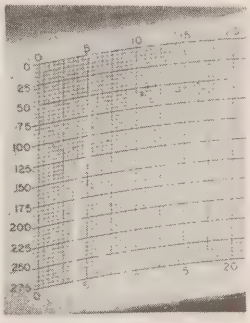
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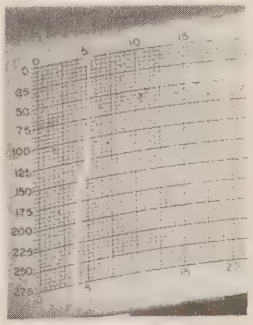
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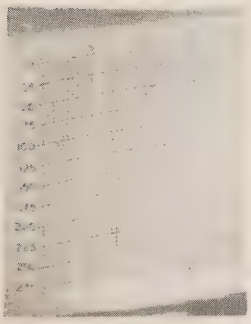
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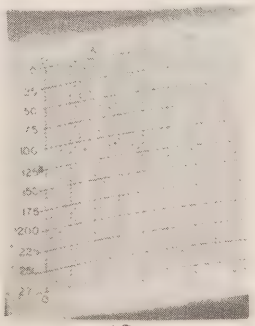
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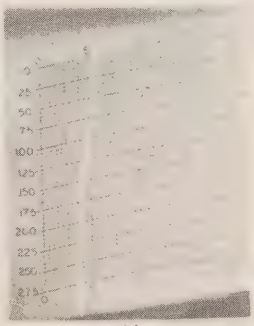
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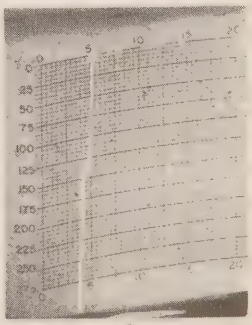
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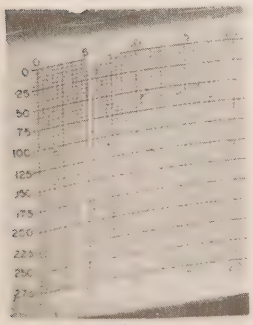
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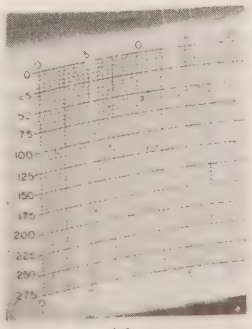
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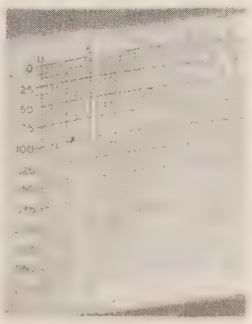
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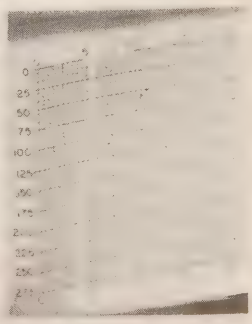
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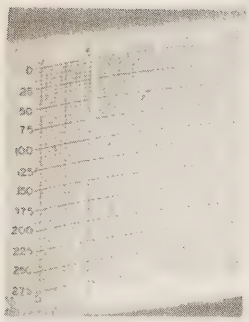
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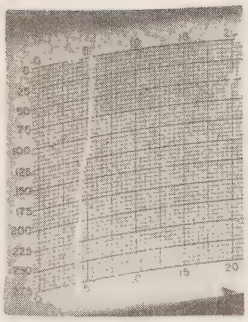
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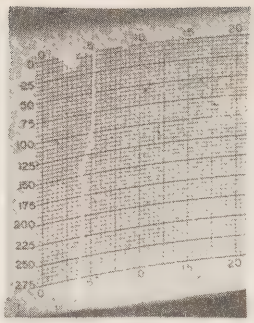
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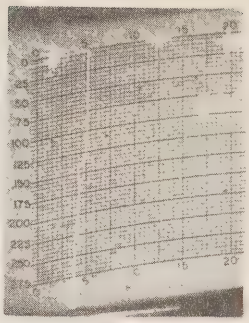
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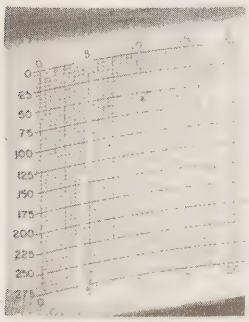
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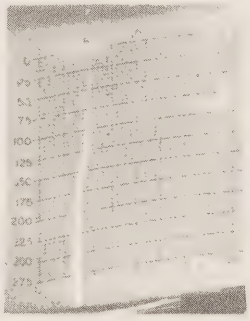
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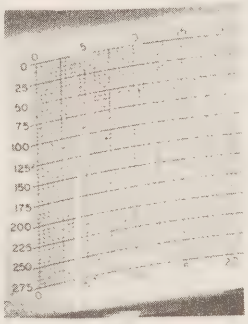
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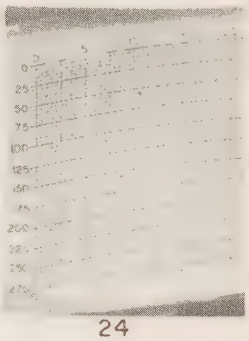
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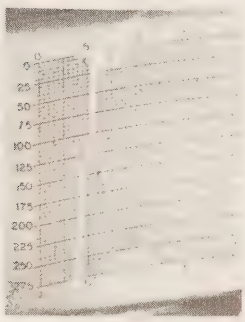
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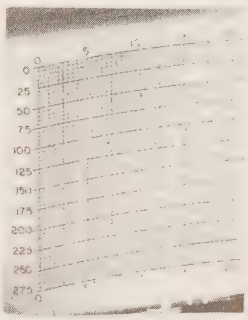
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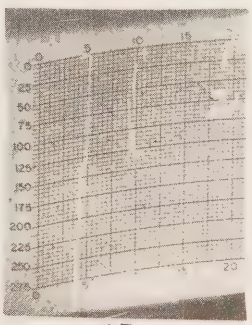
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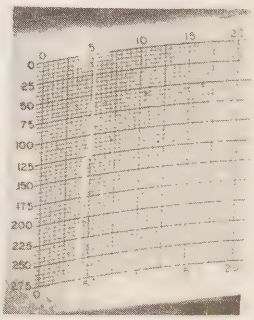
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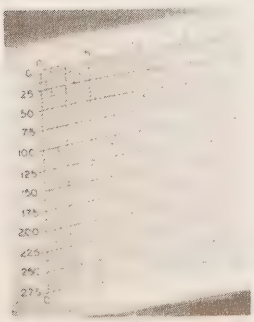
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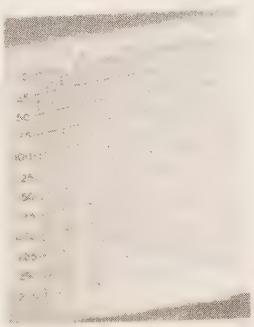
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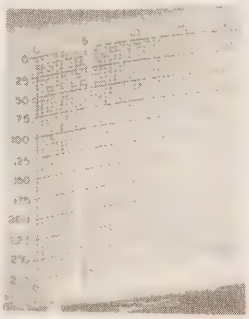
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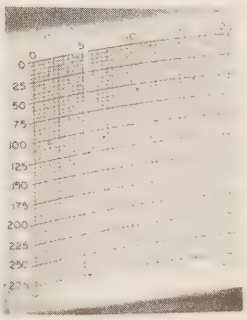
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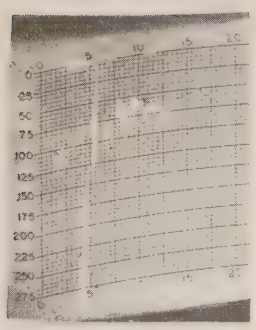
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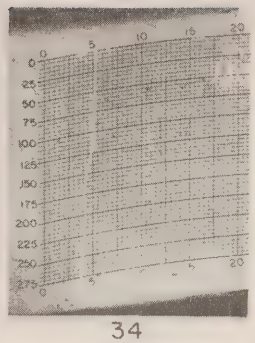
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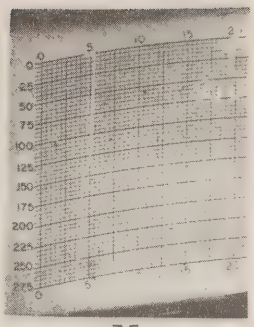
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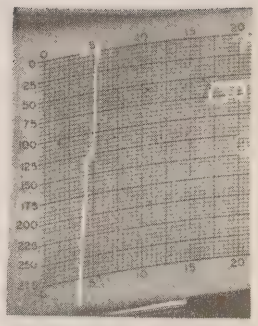
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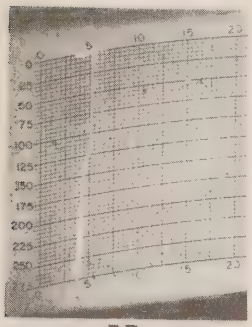
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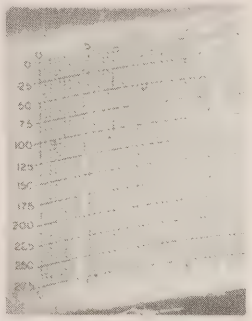
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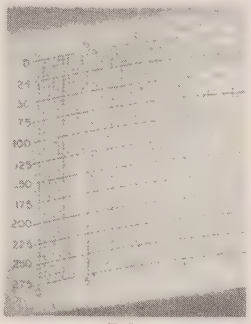
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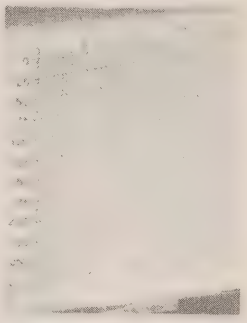
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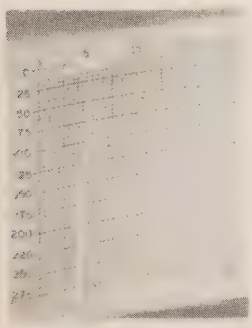
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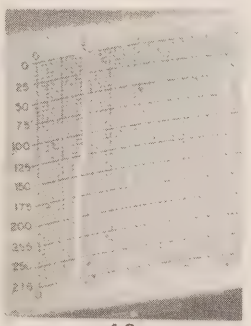
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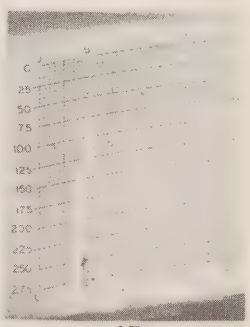
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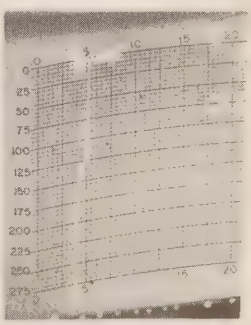
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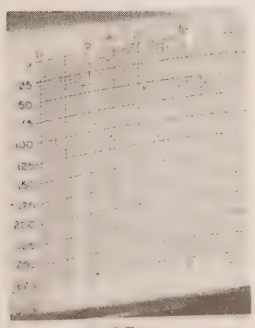
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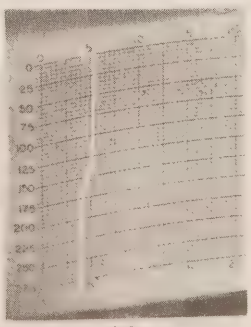
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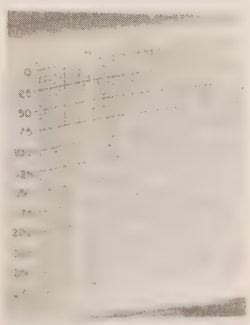
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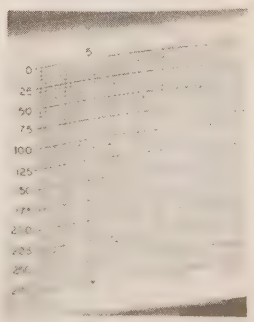
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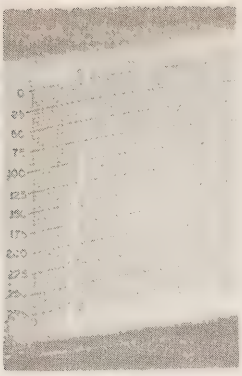
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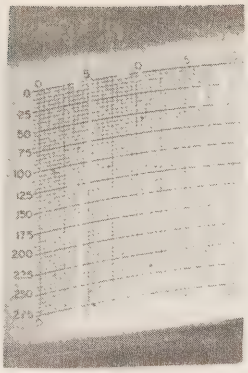
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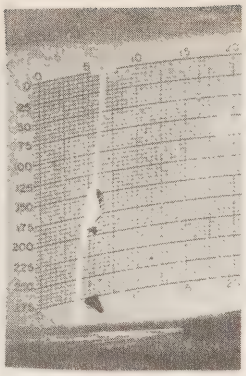
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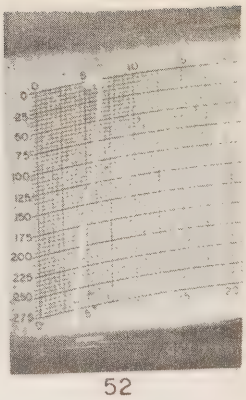
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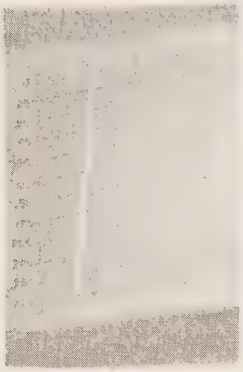
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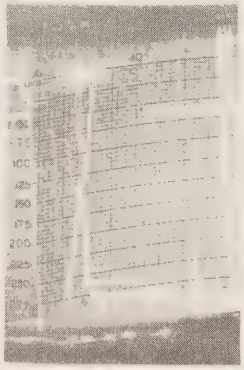
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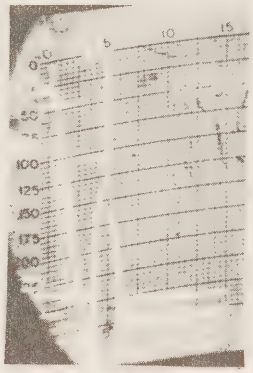
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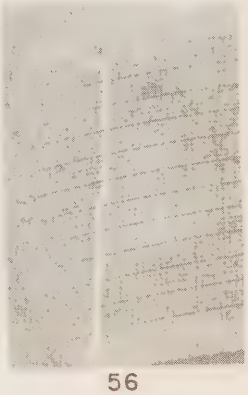
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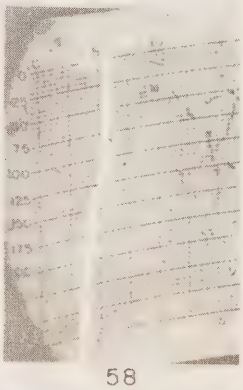
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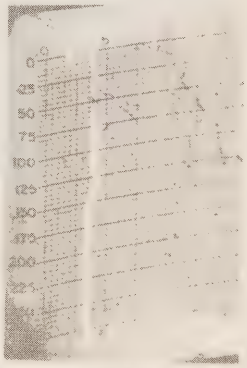
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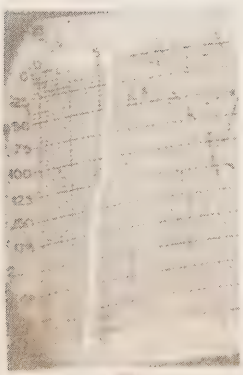
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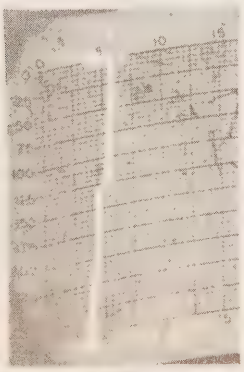
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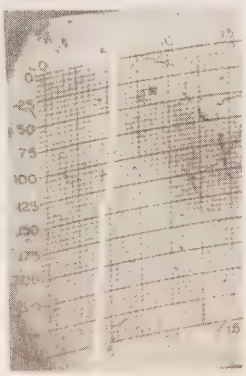
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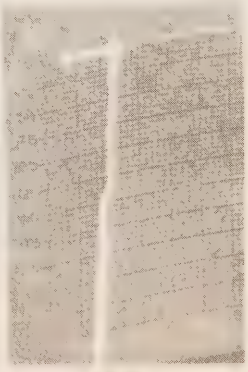
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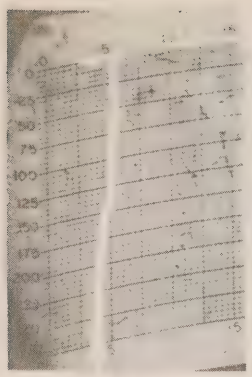
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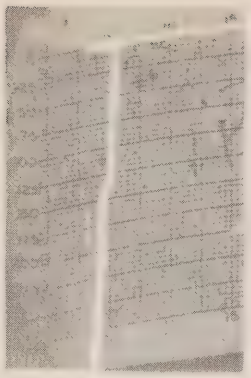
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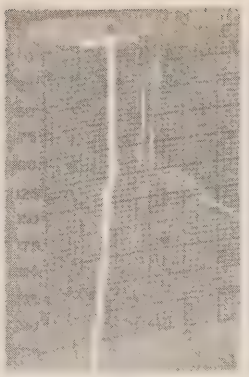
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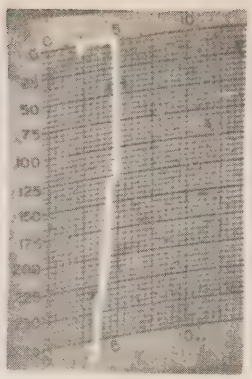
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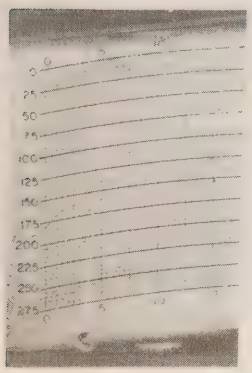
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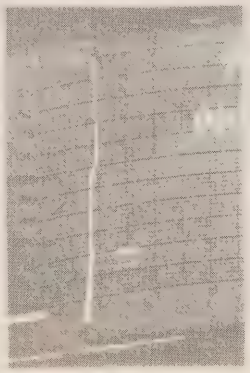
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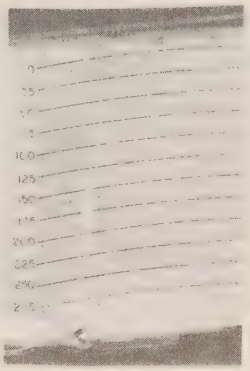
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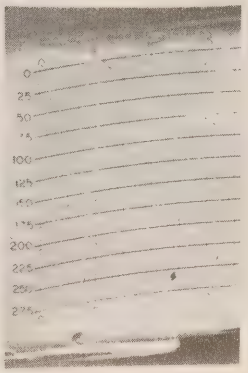
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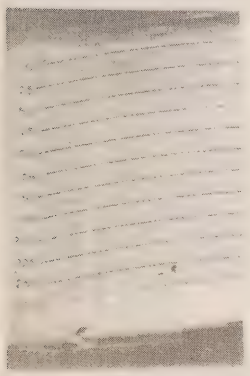
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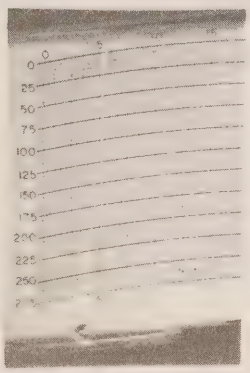
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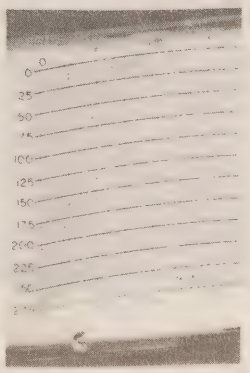
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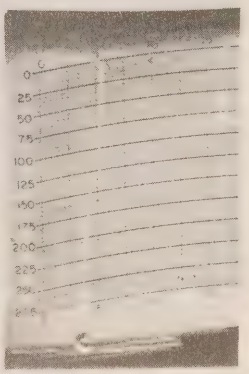
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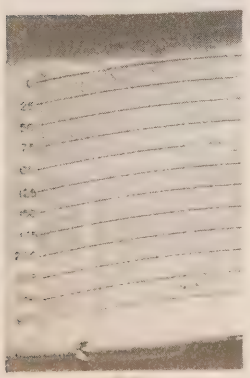
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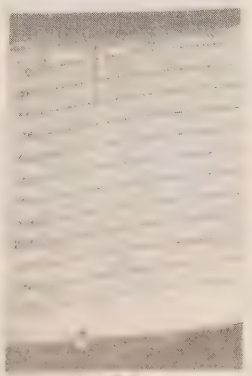
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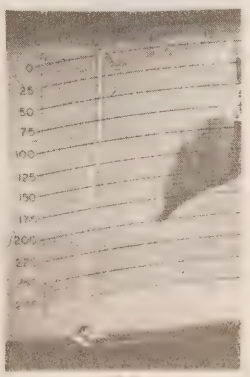
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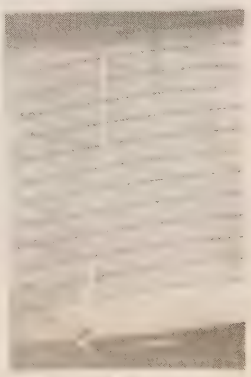
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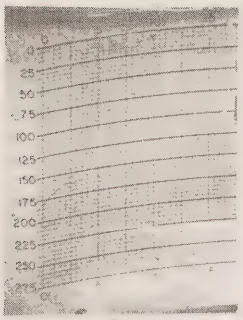
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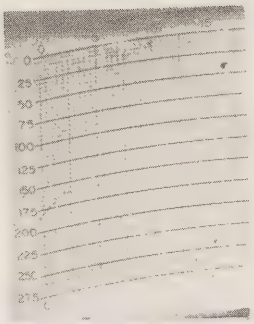
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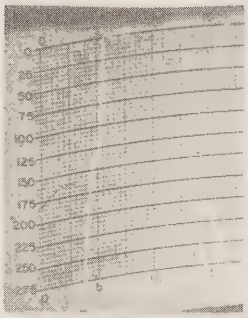
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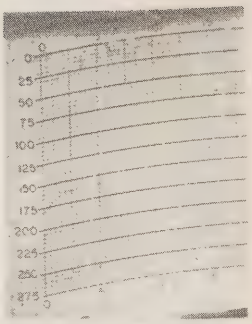
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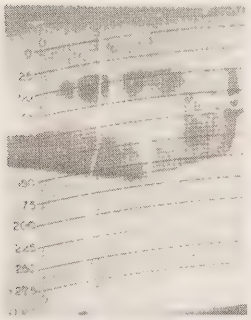
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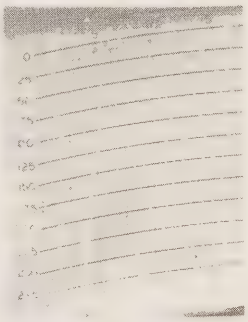
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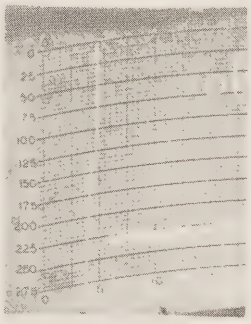
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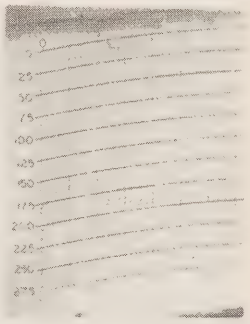
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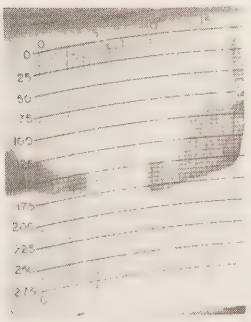
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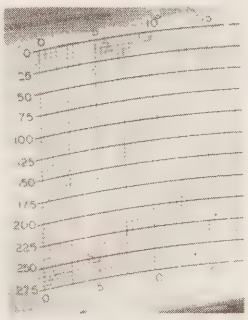
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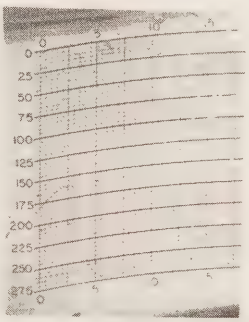
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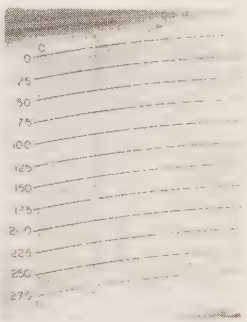
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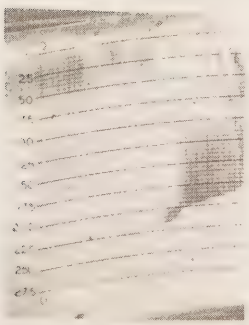
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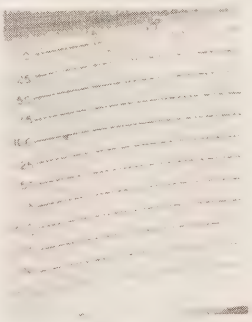
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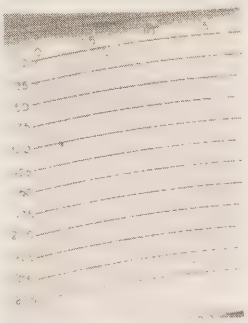
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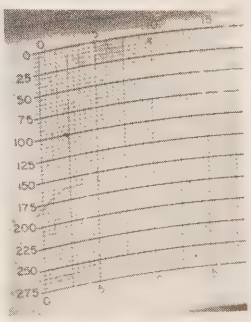
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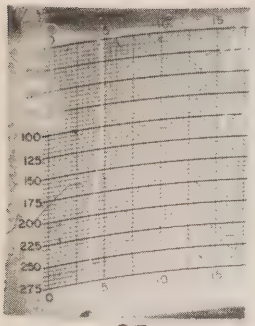
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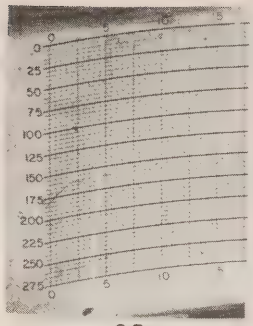
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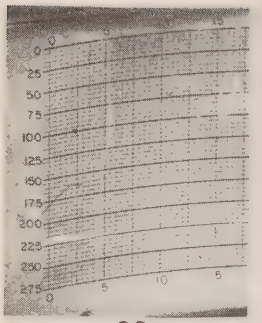
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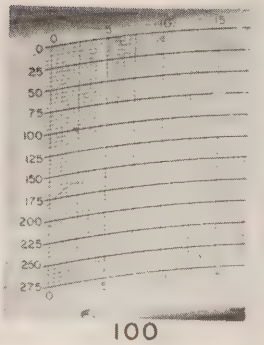
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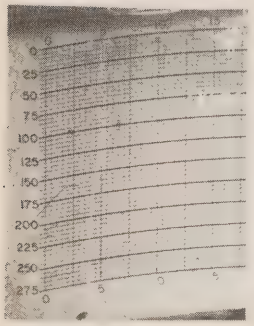
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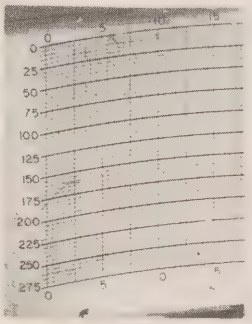
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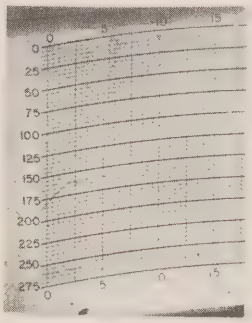
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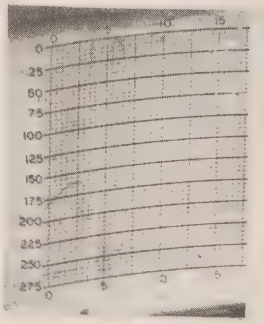
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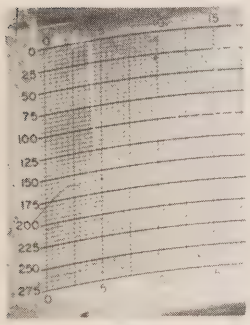
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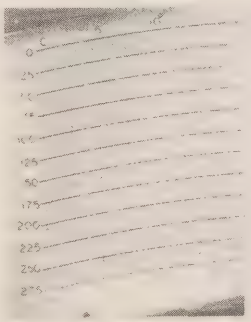
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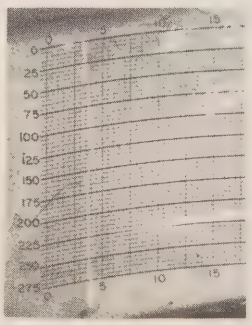
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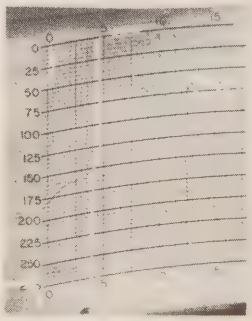
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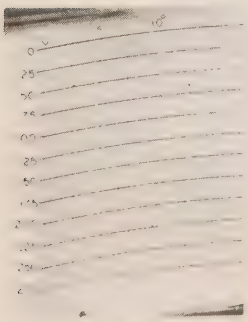
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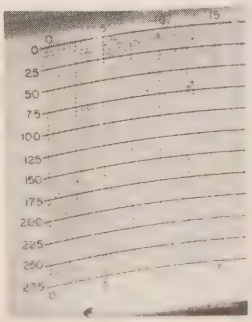
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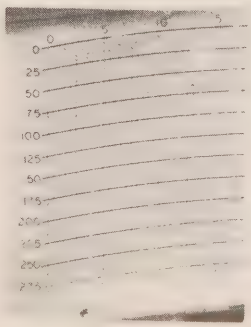
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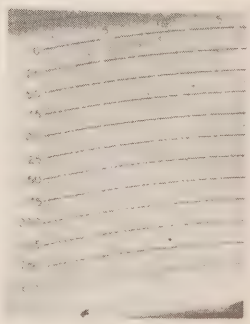
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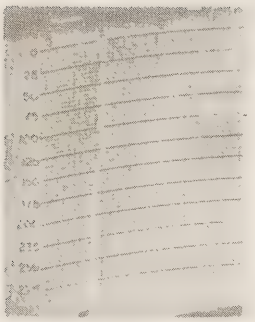
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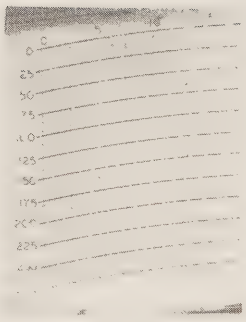
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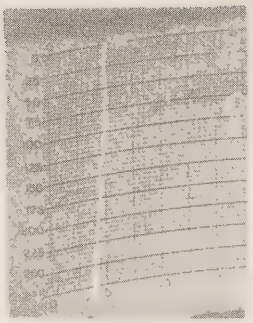
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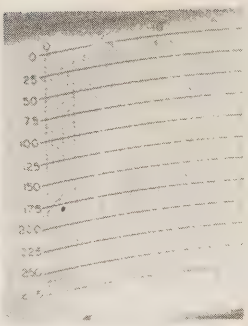
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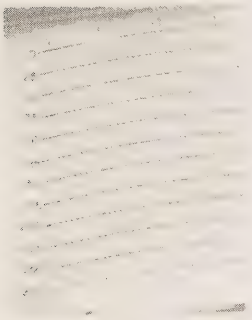
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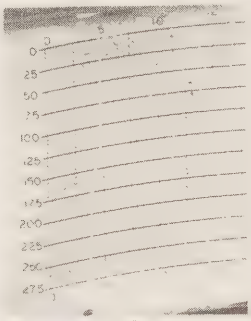
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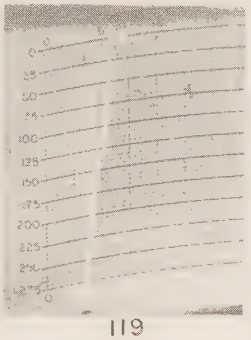
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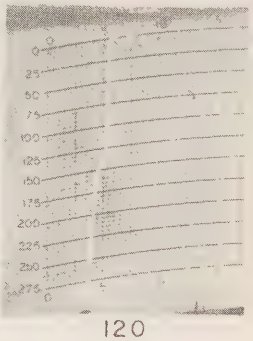
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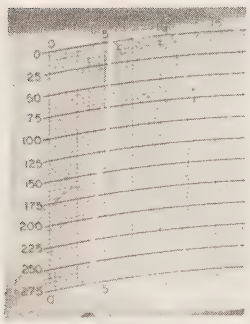
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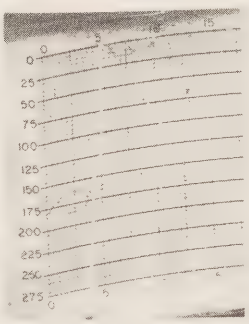
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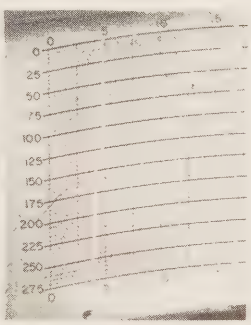
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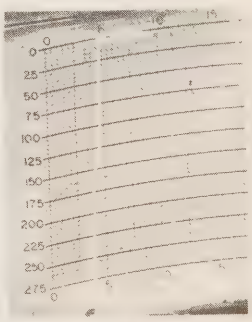
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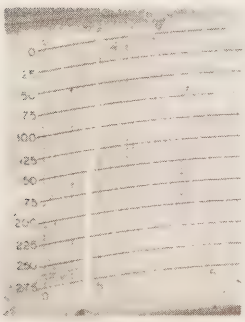
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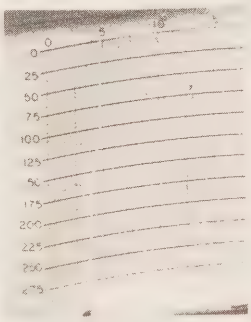
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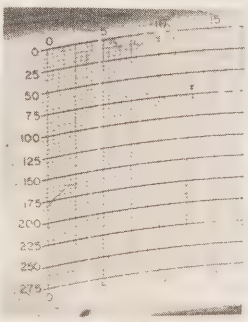
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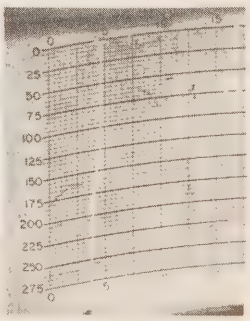
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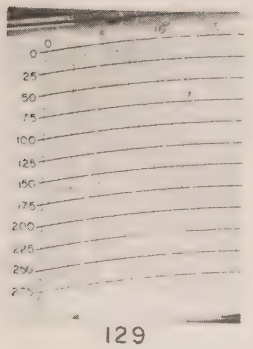
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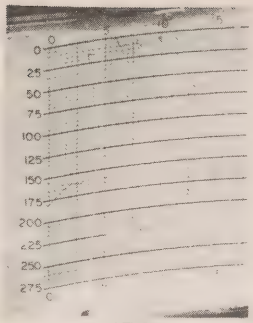
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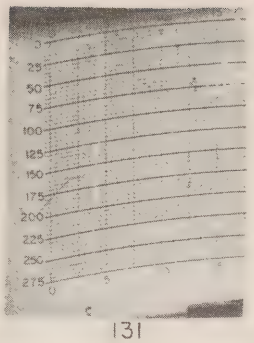
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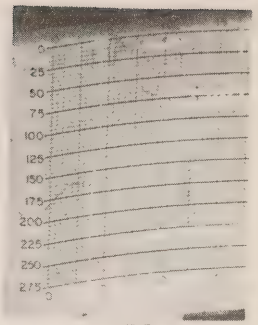
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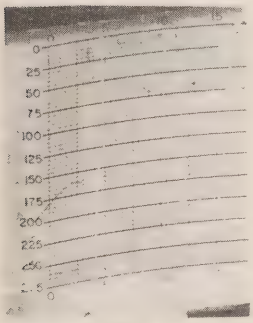
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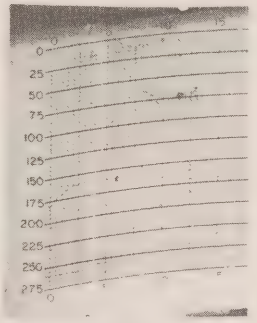
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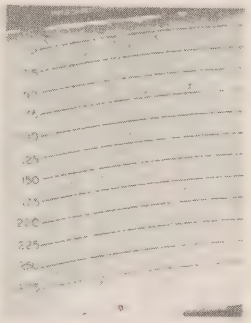
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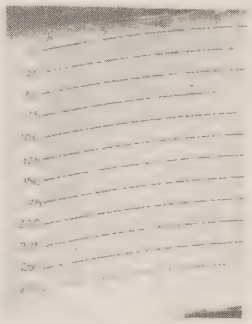
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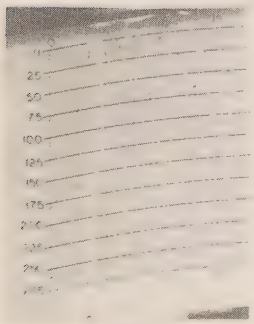
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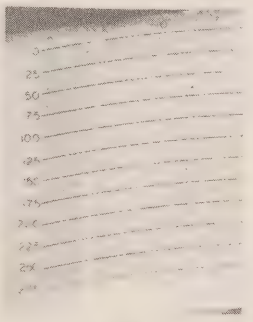
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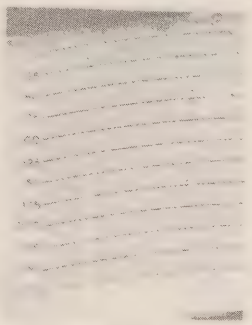
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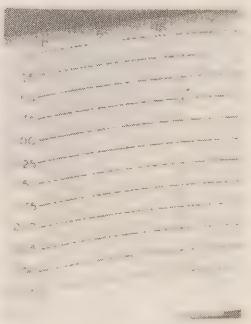
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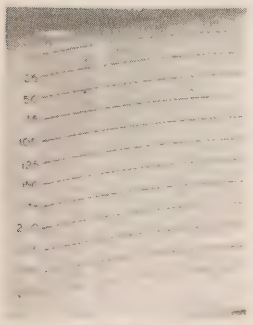
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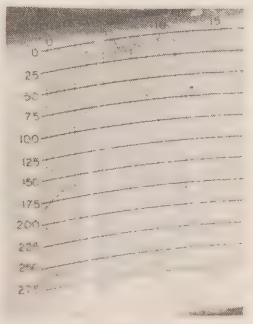
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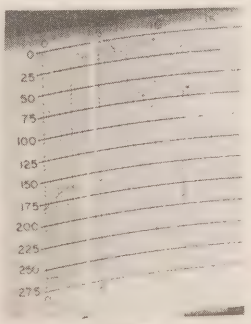
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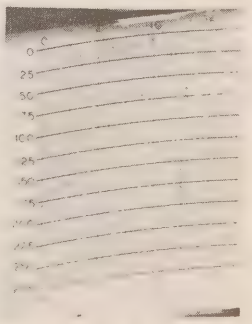
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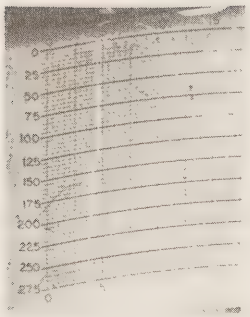
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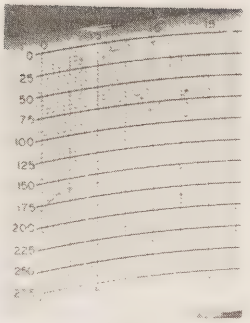
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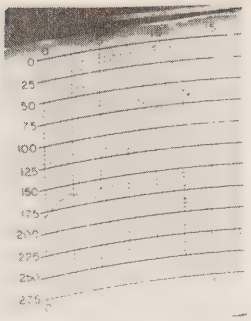
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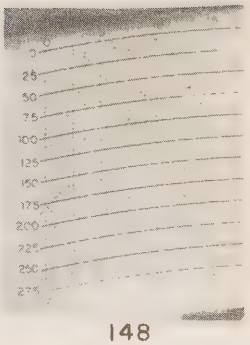
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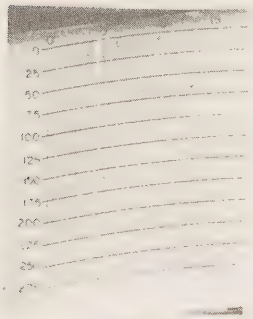
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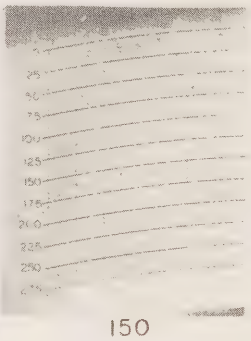
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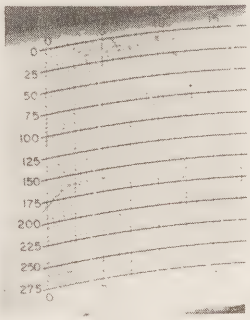
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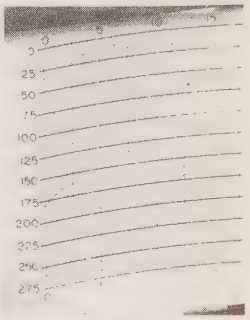
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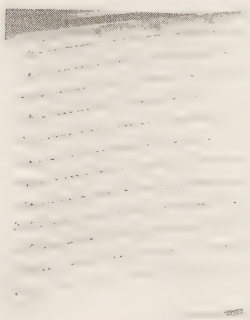
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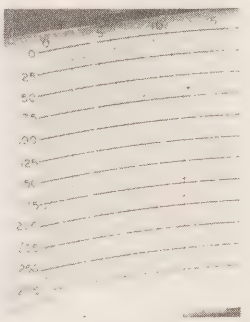
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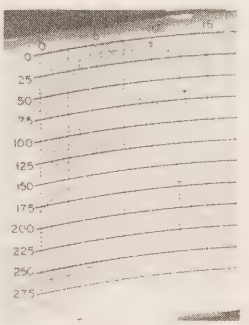
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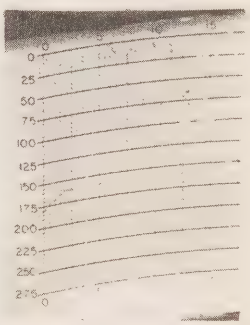
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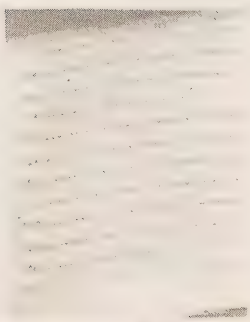
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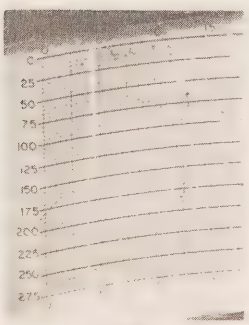
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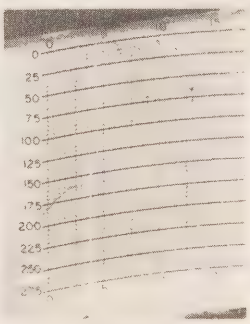
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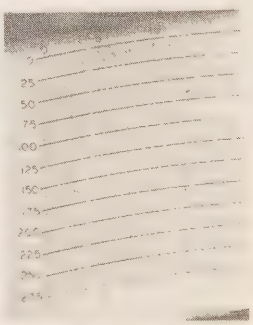
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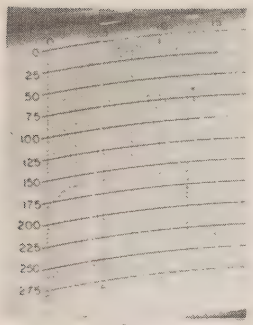
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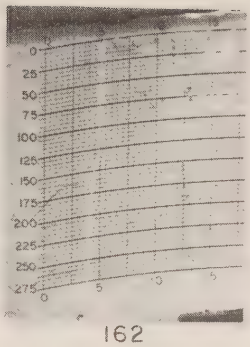
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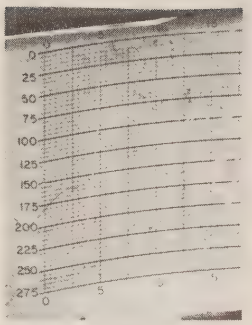
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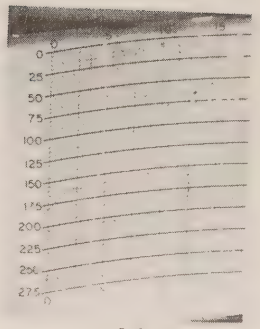
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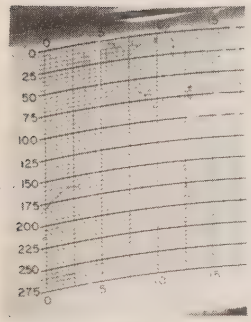
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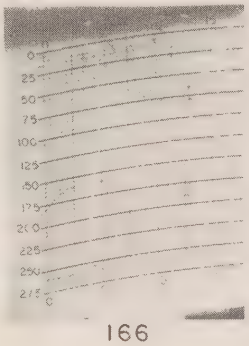
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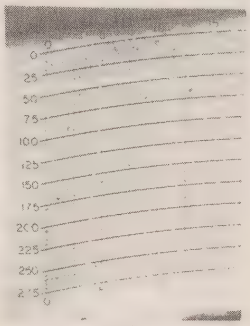
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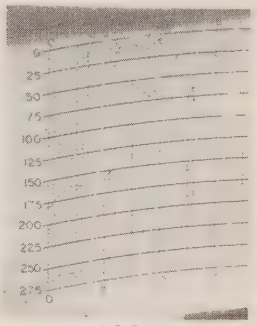
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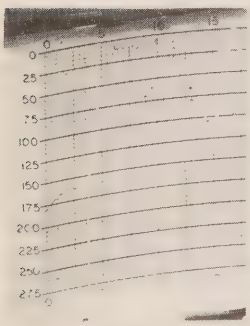
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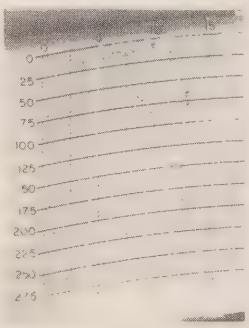
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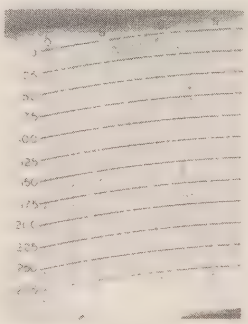
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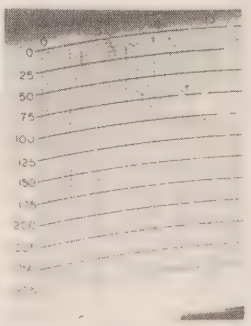
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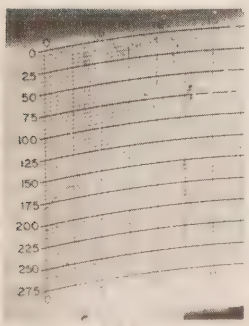
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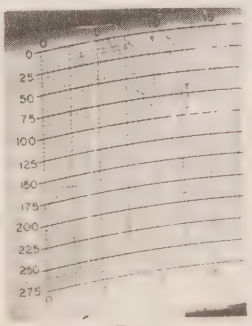
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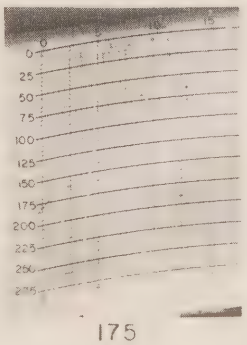
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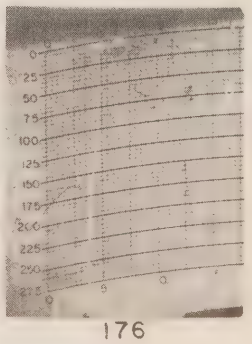
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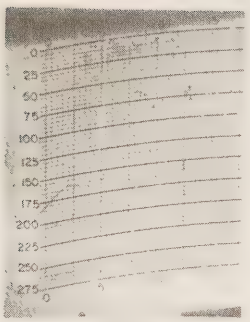
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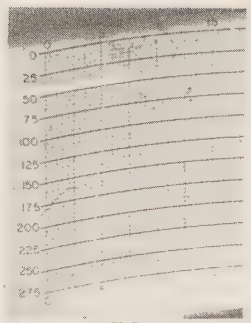
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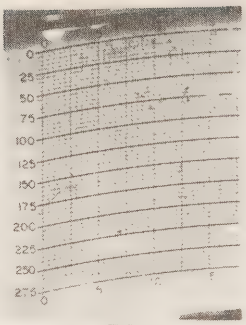
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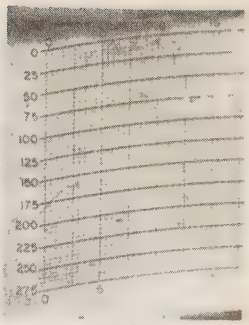
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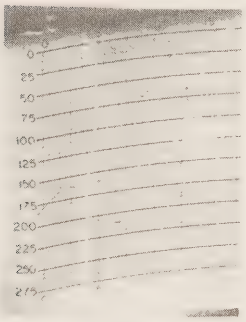
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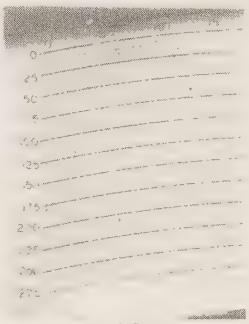
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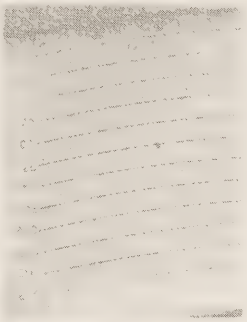
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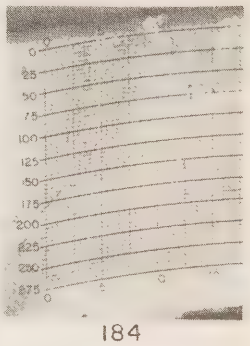
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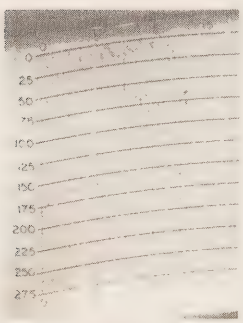
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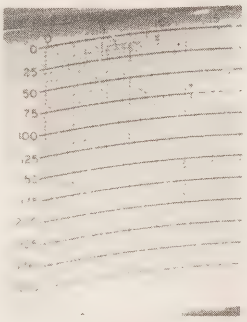
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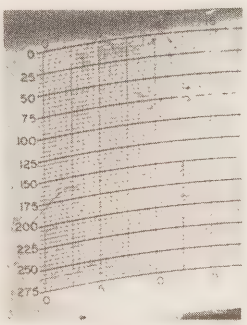
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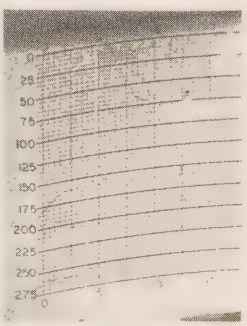
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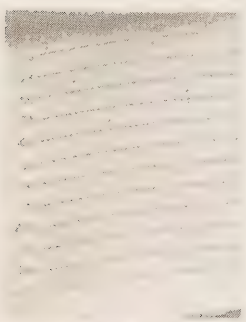
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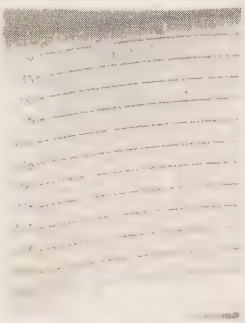
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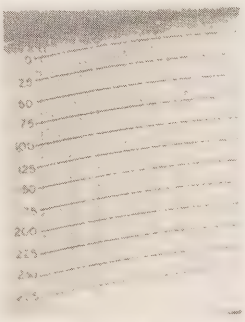
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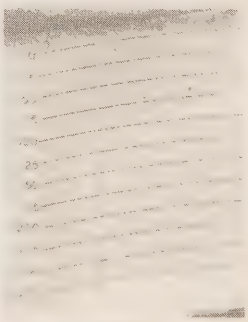
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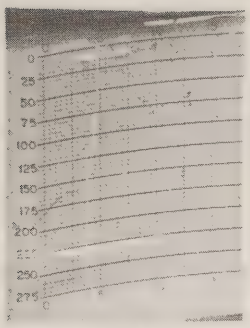
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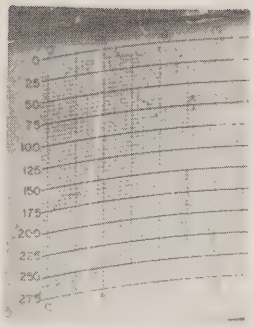
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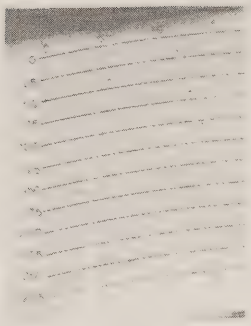
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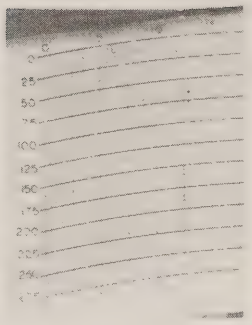
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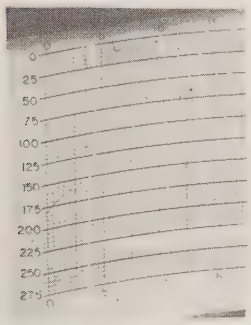
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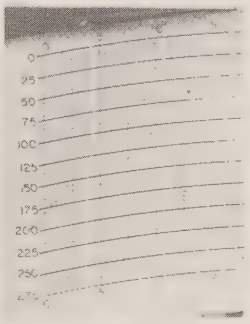
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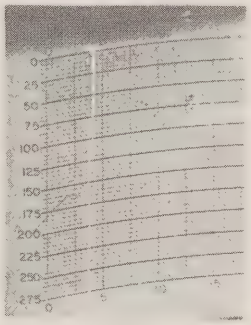
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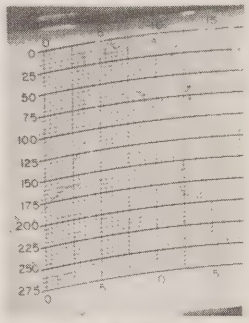
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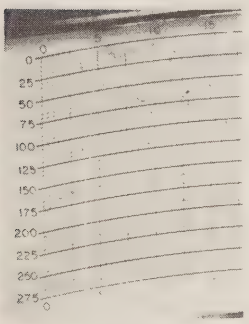
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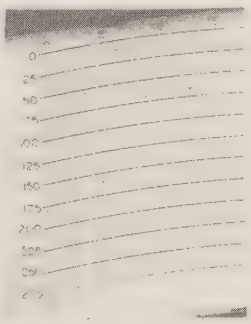
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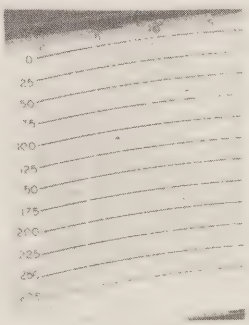
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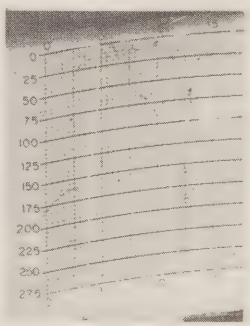
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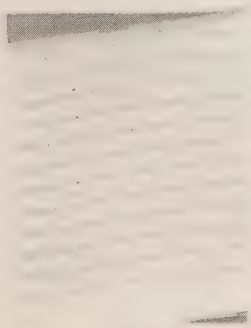
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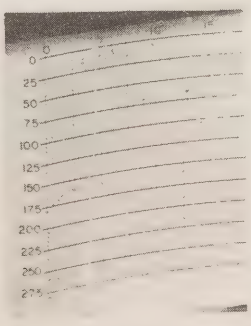
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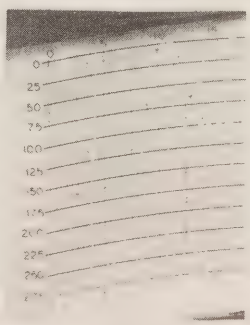
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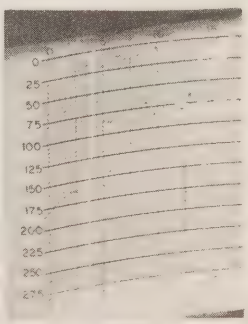
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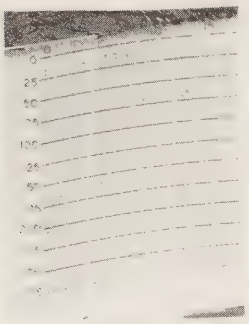

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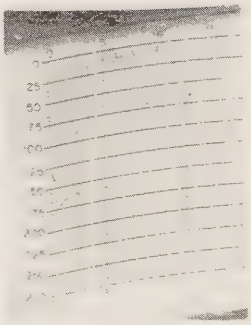

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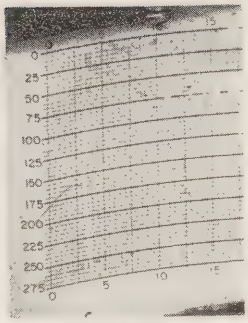

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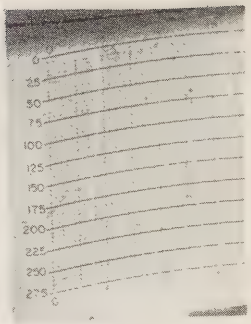

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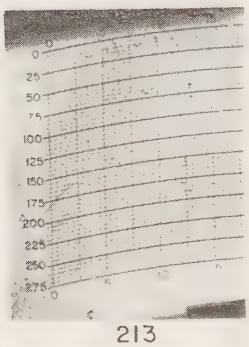

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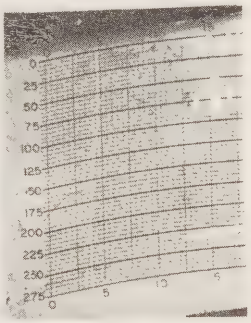

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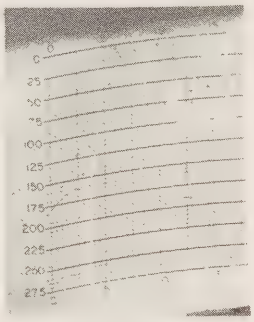

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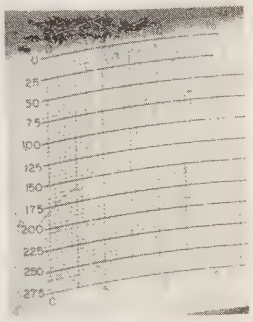

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SECTION V

Surface Salinity Data

SURFACE SALINITY OBSERVATIONS

Date - Time G.M.T.	Position Latitude	Longitude	Salinity ‰
	CCGS VANCOUVER - P-67-5		
67-12-03-238	48°33'N	125°32'W	31.960
04-01.2	48°38'	126°00'	31.808
04-03.0	48°42'	126°40'	31.371
04-06.0	48°47'	127°40'	32.115
04-	48°51'	128°40'	32.264
04-13.0		129°40'	32.401
04-17.0	49°00'	130°40'	32.305
04-		131°40'	32.432
04-	49°09'	132°40'	32.475
05-02.0		133°40'	32.582
05-	49°18'	134°40'	32.576
05-		135°40'	32.522
05-	49°26'	136°40'	32.553
05-		137°40'	32.491
10-00	50°00'	144°28'	32.621
11-00	49°54'	145°01'	32.612
12-00	49°59'	145°03'	32.615
14-00	50°00'	145°00'	32.427
15-00	50°00'	145°00'	32.603
16-00	50°06'	144°57'	32.602
17-00	50°00'	145°00'	32.595
18-00	49°54'	144°58'	32.613
19-00	50°00'	144°50'	32.620
20-00	49°56'	145°04'	32.157
21-00	50°00'	145°04'	32.572
22-00	49°51'	145°17'	32.590
23-00	50°00'	145°00'	32.581
24-00	49°59'	145°08'	32.583
25-00	50°03'	145°06'	32.596
27-00	50°00'	145°00'	32.572
28-00	49°59'	145°02'	32.577
29-00	50°01'	144°59'	32.582
30-00	50°00'	145°00'	32.586
31-00	50°00'	145°03'	32.576
68-01-01-00	50°00'	145°02'	32.584
02-00	50°01'	145°01'	32.573
03-00	50°00'	145°03'	32.574
04-00	50°01'	144°59'	32.574
05-00	49°59'	144°58'	32.587
06-00	49°59'	145°03'	32.580

SURFACE SALINITY OBSERVATIONS

Date - Time G.M.T.	Position		Salinity ‰
	Latitude	Longitude	
	CCGS VANCOUVER - P-67-5		
68-01-07-00	49°59'	144°58'	32.587
08-00	49°58'	144°58'	32.588
09-00	50°00'	145°00'	32.620
10-00	49°52'	144°52'	32.592
12-00	50°03'	145°01'	32.649
13-00	49°58'	144°58'	32.716
14-00	50°00'	145°00'	32.585
15-00	50°01'	145°00'	32.557
16-00	49°57'	144°57'	32.662
17-00	50°00'	145°00'	32.675
18-00	49°55'	145°02'	32.410
20-00	49°51'	142°27'	32.587

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